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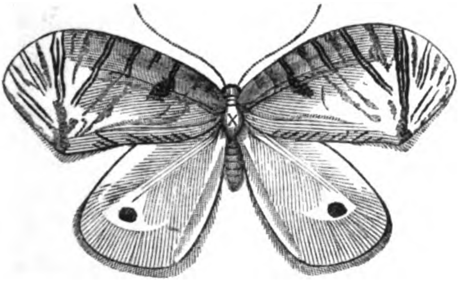

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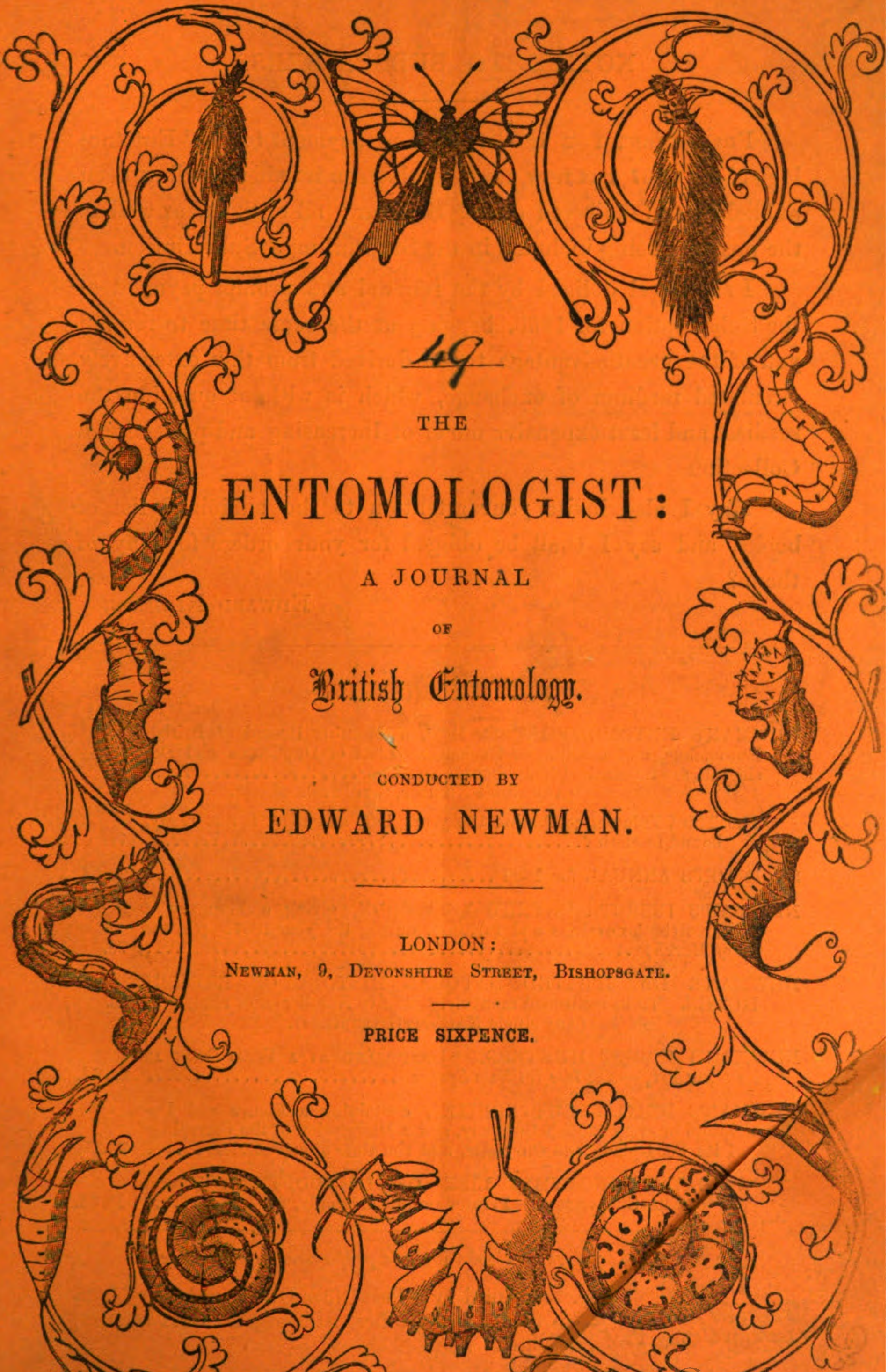

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James Bladon

THE ENTOMOLOGIST.

No. 52.] APRIL, MDCCCLXVIII. [Price 6d.

Variation in Lepidoptera. By Mr. C. S. Gregson, (Continued from vol. iii. page 13).

Cerura vinula. Two perfect specimens, measuring only one inch eight lines in expansion of wings.

Petasia nubeculosa. One specimen, a fine male, ash-coloured or gray, reminding one of a large Acronycta Menyanthidis or A. Aceris.

Notodonta camelina. This species varies much in size and colour here, from light ochreous yellow to deep rich brown: I possess vernal specimens averaging one inch two lines, whilst the autumnal broods below them average one inch six lines.

N. dromedarius. This species is plentiful upon the Lancashire mosses upon birch, in the larval state, in August, but these larvæ invariably produce the variety subfuscata of authors, of a deep rich dull brown: I possess a few of the insect, bred from larvæ gathered in Hampshire, which seemed not to differ from our own local larvæ, but which produced a fine, rich, deep red-marked typical dromedarius.

Pygæra bucephala. Of this constant species I possess one fine male, the dark portion of the wing wanting the silvery gloss peculiar to this species, and curved round the apical blotch both above and below, so as to clasp it, as it were, almost to the apex, giving the blotch a somewhat pointed appearance: this specimen is the only aberration I have ever seen worth naming, though I have repeatedly seen an allied species placed as a variety of it.

Cymatophora flavicornis. Of this insect thousands have passed through my hands or under my eye; and though it is not esteemed a very variable species, I have collected about a score for my collection, all of which differ from each other in colour or marking, but to describe the peculiarities of each is not desirable; one has a deep black-brown head, thorax, typical specimens are preserved in the Linnean Society's collection. I am quite satisfied, after a most careful examination of the types, of their being the same species described under the name of C. quadridentata in the 'Bees of Great Britain.'

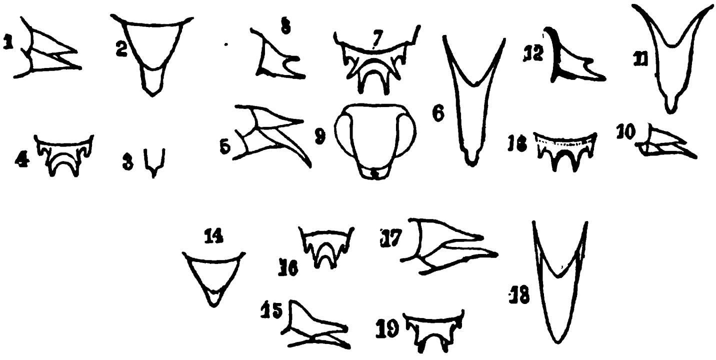
In Kirby's 'Monographia Apum Angliæ' a species is named "inermis;" it was taken by Mr. Trimmer at Brentford: the typical specimen is in the British Museum; I have carefully examined it, and can vouch for its being only an injured example of C. simplex, a male, with the thorax crushed, the scutellum being pressed down beneath the plate of the metathorax, by which the spines that arm the scutellum laterally are hidden; a minute examination, however, enables any person to detect the teeth, which are described as being wanting by Kirby.

I have very carefully examined both the Kirbyan and Fabrician typical specimens, the former being undoubtedly those described in the 'Monographia, the latter placed in the Banksian collection as representatives of Kirby's species. An examination of Kirby's insects shows that his Apis conica is the Cœlioxys simplex, male and female; the Apis inermis, as shown above, is referable to the same species. The three Fabrician species, A. conica, A. tridentata and A. quadridentata, are likewise all to be referred to the C. simplex. Some doubt must attach to the authenticity of the specimen of A. conica which is described in the 'Entomologia Systematica' as having "scutello inermi," the Banksian insect having the usual tooth on each side of the margin of the scutellum: probably the specimen from which the description was taken was, as suggested by Kirby, one of the leaf-cutter bees.

After a very careful examination of a long series of each species, I have detected such constant and marked differences as will, I think, render the separation of them a matter of little, if any, difficulty; I have also made a few drawings, in the hope of assisting more than a mere description can possibly do.

1. Both sexes of Cœlioxys quadridentata may be distinguished from all the other species by their having black spines at the apex of the intermediate and posterior tibiæ; in all the others the spines (calcariæ) are more or less pale ferruginous: this character alone would serve to separate

them, but the female is also to be known by the broad lanceolate form of the apical anal segment, which is terminated by a narrower point, as shown in figure 11; 10 represents, in profile, the apical segments of the same sex; 13 is the apical segment of the male, viewed as above; and 12 is the profile of the same.



2. C. simplex. The female of this species is readily distinguished by its more elongate and narrower ventral segment; the abdomen is also proportionably longer than in C. quadridentata; in small examples the ventral plate tapers to a point, with scarcely any indication of the notch at the sides near the apex, being simply lanceolate; the normal form of the valve is shown in figure 6; the profile of the apical segment, showing the inferior plate to be much longer than the upper, is seen in figure 5.

The male may be distinguished by viewing the abdomen above, when the two upper spines at the apex will be seen to be directed outwardly, as shown in figure 7: these spines, in C. rufescens and in C. umbrina, are straight and parallel. At the lateral basal angles of the segment a minute spine will be observed very visibly projecting: this spine will also be found in the other species, but usually it is very minute, and never so prominent as in the male of C. simplex: figure 8 is the same segment in profile.

3. C. rufescens is very like C. umbrina, but is certainly a very distinct species; in both, the plates of the apical

segment of the abdomen, in the females, are nearly of the same relative length to each other; they are also of nearly the same form in both species. The abdomen of C. rufescens is very convex both above and beneath, much more so than in C. umbrina; the pubescence is of an ochraceous colour, the face being densely covered; the pubescence of C. umbrina is hoary, and the face of the insect only thinly clothed; in other particulars they also differ widely. C. rufescens is also a considerably larger species, being usually in length about six lines, C. umbrina never exceeding four and a half. Figure 1 is the profile of the apical segment of the female of C. rufescens; figure 2 represents the fifth, and also the apical ventral plate of the abdomen of the female; figure 3 is that of a rare variety in the form of the apical plate, it having a distinct spine or tooth at the apex. Figure 4 shows the apical abdominal segment of the male, the upper teeth being slightly divergent; in C. umbrina they are straight. Another distinguishing characteristic of the male of C. rufescens is, that in the middle of the fourth ventral plate of the abdomen there is a distinct notch; it is only to be readily seen by the aid of a pocket lens; the apex of the abdomen must be pointed towards the eye, when the notch will be distinctly visible in the middle of the margin of the fourth plate.

4. C. umbrina will be separated by attention to the preceding remarks; the females of C. umbrina and of C. rufescens are the only ones that have the apical plates of the abdomen of nearly the same length. Figure 14 represents the form of the two apical ventral plates in the female; 15 is the same in profile, and 16 the apical segment of the male.

In my work on 'The Bees of Great Britain,' I quoted Cœlioxys mandibularis as a probable variety of C. simplex: at that time I only possessed a single example; subsequently I obtained it from Carlisle: my first specimen was from Yorkshire. The male I do not know, and that sex was not known either to Nylander or Bohemann, to both of whom I showed my unique British example. I am now quite disposed to consider it a good species. The species named "sponsa" in my work I suspected to be the male of C. simplex, and since the publication of my book Mr. Newcombe, of Dartford, bred both sexes of C. simplex from a nest of Megachile ligniseca, the male proving to be my C. sponsa.

5. C. mandibularis is distinguished from all the other species by its prominent geniculated mandibles, the basal half being thickly covered with pubescence; the wings have a distinct fuscous border on the apical margins, not extending to the enclosed cells. The form of the apical segment is very similar to that of C. simplex: a series of examples is required in order to ascertain in what particulars it further differs from C. simplex.

6. C. Vectis is the largest known British species; its snow-white widely interrupted marginal bands on the abdomen, in connexion with the form of the apical ventral segment of the abdomen of the female, readily distinguish it from the same sex of the other species; the colour of the abdomen, so intensely black, its coarse punctuation, and the lateral snow-white fringe on the margins of the abdominal segments, at once distinguish it: these patches of fringe are narrowed to a point inwardly.

1. CŒLIOXYS 4-DENTATA.

Apis 4-dentata, *Linn. Faun. Suec.* 422, male; *Syst. Nat.* ii. 958.
A. conica, *Linn. Faun. Suec.* 443, female; *Syst. Nat.* ii. 958.
Cœlioxys 4-dentata, *Smith, Zool.* iii. 1151; *Schenck, Bees of Nassau,* 364, male, female.
Cœlioxys acuta, *Nyland. Mon. Apum Boreal.* 250, female.

This species is not found in the London district, at least I never knew of its occurrence; I have taken it at Deal, and in Suffolk, at Lowestoft; Mr. Rothney found it near Ipswich. I do not know what bee it is parasitic upon. I have rejected all the synonyms which I could not confirm by an examination of specimens. The Fabrician and Kirbyan insects both belong to the next species.

2. CŒLIOXYS SIMPLEX.

Apis conica, *Fabr. Ent. Syst.* ii. 341, female; *Kirby, Apum Angl.* ii. 224, male, female.
Anthephora conica, *Fabr. Syst. Piez.* 380.
Apis inermis, *Kirby, Mon. Ap. Angl.* ii. 229, male.
Cœlioxys conica, *Curtis, Brit. Ent.* viii. fol. 349, pl. 349, figs. 6 and 7.

C. simplex, *Nyl. Revis. Apum Boreal.* 279, female; *Smith, Bees Great Brit.* 147; *Schenck, Bees Nassau,* 369.

C. sponsa, *Smith, Bees Great Brit.* 147, male.

This is the most abundant species of the genus in the London district. I have received it from all parts of the country. It is parasitic upon Megachile ligniseca, Willughbiella, and also upon M. circumcincta.

3. CŒLIOXYS RUFESCENS.

Cœlioxys rufescens, *St. Farg. Hym.* ii. 519; *Blanch. Hist. Nat. des Ins.* iii. 413; *Smith, Bees Great Brit.* 149; *Schenck, Bees Nassau,* 366; *Nyl. Revis. Ap. Boreal.* 279.

C. apiculata, *Nyl. Ap. Boreal.* 282, female (var.)

C. hebescens, *Id.* 251, male, female.

This is a local species, but very plentiful in some localities; in the Isle of Wight it is common, particularly so along the Undercliff. I suspect it is parasitic upon Megachile maritima, having repeatedly found them in the same situations. I have obtained specimens from Suffolk, Norfolk, Devonshire, Kent and Hants; it is scarce in the London district.

4. CŒLIOXYS UMBRINA.

Cœlioxys umbrina, *Smith, Zool.* iii. 1153; *Bees Great Brit.* 148; *Schenck, Bees Nassau,* 367.

In 1839 I first took this species in Hampshire, entering the burrows of Saropoda bimaculata; subsequently, in the year 1851, I found it in abundance in Sandown Bay, Isle of Wight, in company with the same species, which abounds in that locality; I have not found it in any other situation. Its time of appearance is about the middle of July: it frequents the flowers of the bramble.

5. CŒLIOXYS MANDIBULARIS.

Cœlioxys mandibularis, *Nyland. Mon. Ap. Boreal.* 3, female.

C. simplex, *Smith, Bees Great Brit.*, var. ?

This species I have received from Carlisle; I also took a single specimen in Yorkshire.

6. CŒLIOXYS VECTIS.

Cœlioxys vectis, *Curtis*, *Brit. Ent.* viii. fol. 349, pl. 349, female; *Smith*, *Zool.* iii. 1152; *Bees Great Brit.* 150, pl. ii. fig. 5, female.

C. punctata, *Schenck*, *Bees of Nassau*, 368.

C. temporalis, *Nyland. Ap. Boreal.* 253.

This may possibly be the species described by St. Fargeau, and named by him C. punctata; indeed I am inclined to believe that the female is so; certainly not the male, which is described as having red pubescence on the face, which C. Vectis has not: be that as it may, Curtis described the species in 1831, St. Fargeau not until 1841. I therefore conclude that Professor Schenck did not know that the name Vectis had the prority. The species is local, but has been taken plentifully at Fulham and sparingly at Croydon. It was first discovered at Black Gang Chine, by Mr. Curtis; I found it very plentiful in Sandown Bay, Isle of Wight, in the middle of July, 1852. It is parasitic upon Megachile maritima. It is not uncommon at Lowestoft, and is found on Mousehold Heath, near Norwich.

The genus Cœlioxys, as well as one or two others belonging to the Aculeate Hymenoptera, have a peculiarity attaching to them, probably in some way connected with their preservation, being in fact a means of passive defence. It is well known to entomologists that many insects secrete and discharge peculiar noxious fluids; others emit offensive odours; in both cases, it has been suggested, for the purpose of self-preservation. Hitherto observation has been principally, in this respect, directed to Coleoptera and the larvæ of some Lepidoptera; indeed, attention has lately been called to the fact of several species of butterflies possessing a most offensive odour, for the purpose, it has been suggested, of rendering them obnoxious to insect-feeding birds.

I am not aware of any one having referred to this subject in connexion with the Hymenoptera. Mr. Kirby has noted the strong aromatic perfume emitted by several bees: of the genus Prosopis he observes that "when pressed between the fingers they emit a powerful, and at the same time agreeable, scent of balm;" he also refers to a species of Crabro that emits a "very stimulating effluvium of æther;" and he quotes Pallas's observation on the Bombus fragrans "fœminæ odore roseo fragrantissime," he having himself remarked the same scent in a male of that species. Having myself discovered the nest of B. fragrans, I can testify to the powerful and agreeable scent emitted by a colony of this bee when their domicile is disturbed, and the community thrown into a panic of disorder.

The species of the genus Nomada also exhale a very agreeable perfume; but I do not think all the parasitic bees are odoriferous, not having observed it in the genera Epeolus, Melecta or Stelis, but I cannot state positively of these genera.

Why some species of bees are, as it were, perfumed, and others not so, it is difficult to assign even a satisfactory conjecture: when the odour they emit is so aromatic, resembling that of herbs and flowers, we cannot imagine it to be a protection from enemies. Many hymenopterous insects, however, emit most offensive exhalations; I believe all the Ichneumons do so in a greater or less degree: those belonging to the genera Pimpla and Rhyssa are very obnoxious in that respect, whilst P. instigator and P. æthiops are most disgustingly offensive.

In the species of the genus Cœlioxys we have an instance of the same character, and when several individuals are held in the hand together, whilst living, the odour they emit is extremely offensive. Such a provision has doubtless a particular purpose: may it not be the means of securing the parasite from molestation when engaged in the act of oviposition in the nest of the working bee? Such may be the case, but I have never observed any pugnacity exhibited by the constructor of the nest towards the intruding parasite. Shuckard records an instance of this kind: speaking of the genus Anthophora, he says, "They are subject to the parasitism of the genus Melecta, whose incursions are very repugnant to them, and which they exhibit in very fierce pugnacity, for if they catch the intruder in her invasion they will draw her forth and deliver battle with great fury." Such an occurrence can, I think, only be an occasional one, as I have watched these bees issuing from and entering the burrows of Anthophora, on very many occasions, without observing such an encounter. Melecta, although a parasite, has not the slightest disagreeable odour, which, if my conjecture be correct, might secure her from molestation.

FREDERICK SMITH.

(To be continued).

Variation in Lepidoptera. By C. S. GREGSON, Esq.

(Continued from vol. iii. page 267).

Amongst the Sphingina few varieties occur until we reach the genus Sphinx; and in my collection there is only one specimen worthy of notice: this is a Sesia bembeciformis, which has the whole of the ordinary yellow segment of a deep rich orange. Sphinx Convolvuli varies much both in size and markings; I possess one specimen three inches in expanse of wings, and more intensely marked than any I have seen.

Smerinthus Tiliæ and Populi. Of this variable species I have specimens entirely without the central markings, and others with simply a central spot or dash; and one in which these marks form a solid unbroken band across the wing. Of Smerinthus Populi I possess two specimens of a light unicolorous fawn-colour: the expanse of wings is only two inches and two lines; yet from these small almost markless females I bred some of the very finest and most distinctly marked specimens I possess.

Of the genus Zygæna I can scarcely venture to speak, Z. Trifolii rarely producing two specimens alike, whilst Z. Loniceræ rarely, if ever, varies in its markings, except in the size of the spots: but I possess specimens of a Zygæna having long pointed fore wings and intense red markings, which should be called a "three blotch;" the basal costal mark is long and narrow, the outer mark club-shaped, and the inner basal mark carried out nearly to the extent of the outer mark, and only being divided from it by the central nerve; the inner margin of this blotch is a regular curve, not notched out as in all blotched typical Trifolii which I have seen. Of Z. Filipendulæ I have many blotched specimens; in some the outer spots coalesce, in others both central and outer spots do so; in one specimen all the spots join and form a longitudinal zigzag blotch through the wing, the basal outer mark being carried out, for three-fourths of the length of the wing, as a red streak, defined by the costal and subcostal nerves; and one specimen has the whole of the upper wings red, except a rather broad dark margin from the apex to the inner margin: this specimen has been the subject of much conjecture, but as it was taken amongst Filipendulæ, and where Trifolii has never been observed, and as the red comes out below as in Filipendulæ, whereas in Trifolii the lower spot is always far behind the outer upper mark, I call it an aberrant Filipendulæ, though my esteemed friend Mr. Newman seemed disposed to think it a distinct species.*

Euthemonia russula. One male, marginal band of inferior wings obsolete; one male, under wings dark, except a discal light patch; another nearly like it; and two females with entire dark brown inferior wings, except only two small light spots.

Chelonia Plantaginis. Of this permanent species I have four good and well-marked aberrations: the most striking is a male having the first third of the superior wing of the ground colour, the usual large costal mark very small and enclosed within a brown lozenge-shaped mark; and a female with the outer third of the wing light, the usual X-like marks being lost for want of the dark outer costal and outer angular marks.

C. caja. This gorgeous species has long had my special attention, and the results of many thousand specimens, bred by myself and by others, are before me as I write. To describe some eighty specimens, all varying from the type, is rather more than I can do, perhaps more than is advisable; suffice it to say that the first row is composed of suffused specimens, generally upon the under wing or wings, sometimes upon the upper wing or wings. In the first row is a fine male having one under wing almost black, except a broad yellow well-defined border, the other wing not being quite so covered with dark scales, but the border exactly as in the first-named. Another is a fine female, one upper wing of which is smoky to the apex, the other side only at the apex. The next row need not be described, but the third row is composed of very dark specimens, and amongst them are some peculiar forms; one with dark brown upper wings, except a small light basal mark on each wing, and a straight streak across the wing near the last third very small. On one side the under wings are broad-banded and suffused inside, the outer margin distinct. Under this is a peculiar brown-upper-winged specimen, with light slightly smoky under wings; and below that a magnificent dark upper-winged specimen, having a few very small light streaky marks; the under wings intense purple velvety black, somewhat metallic in appearance: these last two were fed upon coltsfoot (Petasites vulgaris). The next row is composed of light specimens, the most striking being one with very few brown markings on the upper wings, and only having one very small brown mark upon the under wings; and near it is a specimen possessing most of the typical marking, but entirely devoid of any central under-wing spot; two instances only of this mark being wanting have come under my eye: both specimens were taken by Mr. Davis, at Southport, but in succeeding years, and both were given to me.

---

* I have no recollection of having seen the specimens in question.—*E. Newman.*

Arctia lubricipeda. Amongst several varieties, more or less well marked, is one specimen having a spotted basal band across the upper wings; these are arched outwards; streaky dark broad band and an apical streaky mark; the under wings with a broad dark blotchy band,—a very striking aberration.

A. Menthrasti. This species varies much in colour and in the number and intensity of its markings, but in this neighbourhood it does not often sport into the variety Walkerii; one specimen, given me by the late Mr. Tiltman, is perhaps equal to any specimen of Walkerii I have ever seen; and the next specimen is even a more strange aberration: it has rather faintly spotted superior wings, as in ordinary specimens, with dark longitudinal streaky or long blotch-like markings upon the inferior wings.

A. Mendica. I have one hermaphrodite having male and female antennæ, and of a light smoky colour throughout; one pure white, except only two indistinct central nerve-spots upon the upper wings; one large female slightly smoky, with a darkish costal margin continued darkish round the cilia; and one dark smoky well-marked female, having a dark brown costa and cilia: this is perhaps the most striking aberration imaginable, and one which, seen by itself, would severely test the discriminative powers of our best aberrationists, but, placed as it is in my long series of variously marked and coloured specimens, some of which lead gradually up or down to it, there is no difficulty in assigning it a place and a name.

Liparis Monacha. Of this variable species little need be said, further than that I possess it from very light to almost suffused black.

L. dispar. I have one small male, bred, with shoulders light brown, outwards of that and under wings very light stone-colour; and two large bred males, from the same brood, unicolorous dark brown upon all the wings; the lunate discal marks are small, but distinct, upon the superior wings.

L. auriflua. I possess one male having a basal dark blotch, also one apical, one central, and one large anal blotch: this is the only specimen that I ever saw of this species worthy to be called a variety.

Passing over a number of permanent and variable species, I now come to Odonestis potatoria, of which I possess one large female having the head and front of thorax dark black-brown, and the whole insect rich brown-ochre; one female is light yellow within the oblique apical streak, but outside that it is rich brown-ochre continued through the under wings; three females, light whitish buff, from Whittlesea Mere: this is the Whittlesea Mere variety.

Bombyx Trifolii. I have two females of a rich deep red-brown, and having the usual curved marking almost obliterated.

B. Quercus. I have one male, expanding about one inch and six lines, of a light buff-brown, with distinct shoulder-marks; two large bright light-red males; one small dark male, expanding an inch and three-quarters, without any shoulder-mark; one male in dark female colouring; one dark male, entirely wanting the usual curved markings through the wings; one fine male having only a faint indication of marking upon the under wing; one fine female like it; one large female, entirely without any under-wing markings; and another beautiful specimen, also a female, of a dark olive-green brown, without any markings whatever upon it, except a faint indication of the central light spot; and below that specimen is a fine female in male attire, of a deep rich brown, with waved striga well-defined and shoulder-marks fairly defined: these latter all belong to the generally recognized group Roboris of Stephens, now sometimes called Callunæ, but why so called I could never understand, unless its author, who once wrote an entomological paper in the 'Zoologist,' is supposed to have proved it distinct from the old Roboris, or from the following series of broad straightish-bordered specimens, principally given to me by Mr. Doubleday, as the Quercus of his Catalogue and of the South of England. In this series is one male, bred by Mr. Hague, having the dark of the upper wing cut straight across and not curved, one female cut circularly, and one male cut so that the costal point is outwards, whilst, in all the southern specimens I possess, the dark portion of the wings is cut somewhat, but slightly, angularly, so as to point inwards.

Saturnia Carpini. One male so dark that its capturer called it the Emperor of Morocco; three barren females approaching the colouring of males.

C. S. GREGSON.

November 9, 1867.

(To be continued).

The Lepidoptera of Labuan. By Dr. C. COLLINGWOOD.

ALTHOUGH the Lepidopterous insects of Labuan cannot vie with those of South America, as a rule, either in size or in beauty, there are a great number of considerable interest and of striking appearance. They are of course derived from the mainland, and less numerous than those of the Bornean coast; but inasmuch as the jungle of Labuan is extremely fine, and far more accessible than that of the opposite coast, a large number of handsome species may be obtained with comparative ease. The only way to capture the best species is to pursue them into the jungle, though a considerable amount of skill is necessary to overcome the difficulties. The net becomes an awkward instrument in a tangled forest, and the only available method is to watch for them in small open spots, and seize upon those which pass, for pursuit is next to impossible. Many of the species fly with amazing rapidity and strength of wing, and in some cases pursue a straight line through the maze of branches, eluding nearly every attempt to capture them, except by stratagem. Others, often the most handsome insects, fly habitually so high that they are usually out of reach of the net. In all such cases the sacrifice of a single specimen will often secure others, for butterflies are gregarious; and a dead specimen pinned upon a conspicuous twig will often arrest an insect of the same species in its headlong flight, and bring it down within easy reach of the net, especially if it be of the opposite sex. Sugaring the trees has not been tried by entomologists in this part of the world, and the use of a lamp behind a sheet, found so effectual for nocturnal captures by Mr. Wallace, has not yet been seriously tried.

The jungle-road, extending nearly across the island, and the skirts of the jungle, always proved to me the most prolific spots, the insects dashing out for a little distance, and pursuing their erratic flight through the open, in which case, if near, there was a chance of a capture. But even here it was often tantalizing to see a rare and beautiful species fly out of one side of the jungle, cross the road with the speed of a race-horse, and irrecoverably disappear in the thicket on the opposite side, almost before one could draw breath. The swift flight, now over the tops of the trees, now down near the ground, was characteristic of the Pieridæ, while the Papilionidæ distinguished themselves by their strength of wing and straight headlong course.

Another source of disappointment arose from the fact that not unfrequently, when one thought oneself fortunate in capturing a fine insect, after carefully disentangling him from the net, his wings turn out to be so torn and rubbed as to render him almost useless, except indeed as a decoy. This circumstance is due, I imagine, partly to their frequent battles with one another, in which they whirl round one another with the greatest rapidity, and appear to be incited by the greatest ferocity, and partly to their habit of flying rapidly through the interlacing twigs and foliage of the jungle.

Certain species could always be found in particular spots; the orange and pumilow trees in the plantations always abounded with the handsome large red and black Papilio Memnon; grassy nullahs sheltered abundance of small ocellated species; Papilion Pammon floated over every hedge-row, and certain bushes always harboured some swift-flying pale yellow Pieris Namouna; even a patch of sandy sea-shore generally produced a large buff insect (Charaxes), which was fond of alighting upon it, matching it well in colour, so that it was not difficult to secure it. But, without going into the jungle, only about half a dozen common though handsome species could be met with in a morning's ramble, unless, as when, by a fortunate accident, I captured a magnificent yellow satin Ornithoptera, in a pleasure-garden.

During a month I succeeded in taking upwards of sixty species of butterflies in Labuan, a very respectable number for so brief a time, and showing considerable richness of the island in this respect. No complete collection has hitherto been made, though I have seen about a hundred and fifty species in one cabinet; but a gentleman of the garrison, who has lately arrived there, after a long apprenticeship among the Lepidoptera of Malacca, is now busy with his net, and will doubtless soon make more species known. When the road above mentioned was in process of formation through the jungle, some years ago, butterflies were so abundant that they are described as having flown about in perfect clouds, and I am credibly informed, by Mr. Low, that as many as two dozen could be taken in a single sweep of the net. For the same reason probably, cleared ground near the jungle is always most productive of butterflies; and as it is well known that wherever ground is newly cleared new plants immediately spring up, so also, under similar circumstances, a new species of butterfly is likely to occur in the first season after a clearance; but although it may be in profusion then, it does not follow that it is so in succeeding seasons; and the opportunity of securing specimens should not be lost on account of the insect appearing to be so common. As an example of this it may be mentioned that when the compound surrounding Mr. Low's house was cleared a beautiful species of Apatura appeared in myriads, and was abundant all that season, but ever since that time not more than one or two specimens have been observed each year.

The dominant species in Labuan are certainly a Danais, abundant everywhere, and Neptis Aceris; many Cynthia Arsione are met with; and perhaps the most striking and extraordinary of all the Lepidoptera is the magnificent though common moth, Nyctalemon Hector.

In the immediate neighbourhood of Labuan there are two small islands; one entirely covered with jungle down to the water's edge; the other formerly jungle-grown, but now for the most part cleared for cocoa-nut plantations, but still retaining a small patch of the virgin forest. I paid a visit to the latter, and soon discovered that it abounded in the most magnificent of the jungle species, for the island, although small, is nearer to the mainland than Labuan, and, in the tangled jungle which has been allowed to remain, the most exquisite dragon-flies vie with the butterflies in beauty. Moreover, a walk with a net under the boughs of the great trees which overhang the beach, and sometimes impede the passage at high water, gives ample employment for the net, the jungle species coming constantly out and skirting this open space. Here I was sure to meet with species, without difficulty, which in Labuan I might have searched for all day in vain, and many long rows and sails I made to this rich locality. The time which I found favourable for capturing them was from 7 A.M. to near 11; before 7 I have found scarcely any stirring, and as noon approaches they almost suddenly disappear. A few return in the afternoon, but scarcely sufficient to make a walk profitable. Thinking that the other island might be equally rich, I went with my net to visit it, but alas! I only saw, in all its verdurous depths, two butterflies, *both* the commonest species of Danais and Terias; and was the more vexed, on my return, to learn that the morning had been remarked in Labuan as one singularly favourable to Lepidoptera, which had been flying about in unwonted abundance. Looking for some cause for this difference between the two islands, I imagine that the first-mentioned abounding in pools of water gave it more favourable conditions for butterfly existence; while in the latter, as I could nowhere meet with a drop of water, so also I could find no Lepidopterous insects.

C. COLLINGWOOD.

Entomological Notes, Captures, &c.

Eupithecia fraxinata at Huddersfield. — I took a fine specimen of this insect under an ash tree in a garden here, about the middle of May last; it had evidently just emerged from pupa, as the wings were quite limp. Has it been recorded from this locality before?—*G. T. Porritt; 8, Clare Hill, Huddersfield, November 4, 1867.*

Satyrus Tithonus a Scotch Insect. — In your 'History of British Butterflies' you mention that S. Tithonus is ***not*** known in Scotland: I beg to say I have found it common in Kirkcudbrightshire, where also, this summer, Vanessa Cardui was tolerably abundant.— *W. D. Robinson; 2, Shandwick Place, Edinburgh.*

Retinia Buolina.—In the spring of this year the larvæ of this moth were only too plentiful in the buds of different species of Pinus in my garden. P. insignis suffered the most; next in order P. sylvestris, P. austriaca and P. excelsa; I also observed elsewhere the result of the ravages of one in a specimen of P. Benthamiana, and have no doubt that all the genus suffer more or less from it. The larva is hatched (? sometimes) in the autumn, and in October or November they may be found in the dormant buds. If an opaque and hollow resinous exudation should be observed on a bud, or between and uniting two, the presence of a larva may be assumed; and on removing the resin you will either find the enemy or a minute hole by which he has entered the bud. In April and May, when the buds start, the larva feeds actively, and mounts upwards with the shoot, eventually emerging as a pupa at or near the top: the effect often seems to be very like that of an Ichneumon on the larva itself; the shoot becomes full-grown and then dies. No doubt a vigorous tree is seldom or never killed; after the larva is full-fed the tree makes a second growth; but a weakly one, and particularly after removal, may die, as did many of my P. insignis, either from this cause or the severe frost, or both combined; and other species of Pinus made no good growth and were distorted, being permanently spoiled in symmetry of appearance. I cannot indicate any remedy, except picking out and killing, which is very tedious work on a number of trees; can you or any of your correspondents? — *N. C. Tuely; Mortimer Lodge, Wimbledon Park, S.W.; November* 26, 1867.

Larva of Melanthia ocellata. — In this month's number of the 'Entomologist' you give a description of the larva, &c., of Melanthia ocellata, which differ very materially from the habits of the same species here. I have taken the larvæ full-fed in September and October, and these all, as also others reared from the egg, spun their silken webs, but did not change to pupæ until the following spring. I have found the same peculiarity in Larentia salicata, eggs of which hatched July 21st, spun up August 17th, but did not change to pupæ till spring; so far as I recollect, the time of pupation was either two or three weeks in both species. In rearing Pelurga comitata I have always found them bury in the earth, forming cells, but spinning no cocoon. Larentia multistrigaria here has a black pupa, not reddish, as described some years ago in the 'Zoologist' (p. 7324) by Mr. Crewe. — *Andrew Wilson; 21, Young Street, Edinburgh, November* 1, 1867.

Phibalapteryx lapidata in the Kyles of Bute.—I have this year taken a single specimen of P. lapidata on the Kyles of Bute, 400 feet above the level of the sea: it was flying in the early evening, in a marsh or gullet between two abrupt hills.—*John Dunsmore.*

Satyrus Hyperanthus without Rings. — Would any of the readers of the 'Entomologist' be kind enough to inform me whether they have captured any specimens of Satyrus Hyperanthus without either rings or black spots on either side? I took one such as I have described at Darenth Wood, Dartford, in the summer of 1866. — *A. Pitman; 8, Dacre Park, Blackheath.*

Second Brood of Pyrameis Cardui. — The second brood of P. Cardui, which I made a note of (Entom. iii. 363), have turned out a failure. The larvæ fed up well, and changed to pupæ between the 2nd and 24th of October, the pupæ looking equal to the first brood. After remaining in that state six weeks they came forth cripples, with the exception of two, which expanded their wings with difficulty, then retired to a corner of the breeding-cage, and expired in the course of three or four days. The first brood remained in pupa from ten to fourteen days.—*W. West; 6, Green Lane, Greenwich, December* 11, 1867.

Acidalia interjectaria and Cochylis mussehliana.—It fell to my lot last spring to make a long stay in Germany, and whilst at Aix-la-Chapelle I enjoyed the privilege of looking over the magnificent collections of European insects and plants formed by Herr Kaltenbach, well known to English entomologists as the discoverer of the larva of the genus Micropteryx. The Lepidoptera had been arranged under the eye of Dr. Staudinger, and were therefore well calculated to be of service in the identification of species, in order to ascertain their right names. In going through the genus Acidalia I at once remarked that the species which we have in our cabinets under the name of "ossearia" is the dilutaria of Hübner and the interjectaria of Boisduval. The true ossearia (supposing Dr. Staudinger to be correct in his opinion) I have not yet seen in any cabinet in this country: it is a larger insect than interjectaria, the wings are longer and not so rounded, and the colour of the costa is unquestionably *rufous*, or, as M. Guenée describes it, the colour of our penny postage-stamp. I should be glad to learn from any of your correspondents whether they have taken the true ossearia. Among the Tortrices in Herr Kaltenbach's collection I noticed a fine series of Cochylis mussehliana, a species of which I believe very few examples have occurred in this country, and the larva of which feeds on the stems of Alisma plantago. With his usual kindness Herr Keltenbach presented me with a pair of mussehliana; but on reaching home, and comparing them with a single specimen in my possession, taken some years ago in Devonshire and named by Mr. Doubleday, I find no resemblance whatever. On the other hand the continental specimens of mussehliana appear to be identical with the "griseana" *vel* "udana" of our cabinets! Can Mr. Doubleday clear up this little difficulty?—(*Rev.*) *Henry Burney; Wavendon, Bucks, November* 11.

Food of Endromis versicolor.—Would you be so kind as to inform me if the larva of E. versicolor will feed on any other tree or shrub except birch, and, if so, what other food would be suitable? Would either apple or hawthorn do? —*H. McDowall; Kettering, Northlands.*

Fluid ejected by Lepidoptera on assuming the Imago state.—[The Rev. H. J. White inquires whether fluid ejected by Lepidoptera, on assuming the perfect state, is injurious to the pupæ of other insects on which they may happen to fall: he particularly desires Mr. Greene's opinion, and that gentleman has kindly replied as under.—*E. N.*]—I am sorry that I could not answer your letter sooner, but I have been much occupied. I do not think I can give any satisfactory answer to Mr. White's question. I fancy that the fluid, if it fall on a *small* pupa, has an injurious effect, as it probably "smothers" it. As far as my experience goes, it does not injure the larger ones. At the same time it may be better to avoid the risk as far as possible. I always remove the fluid, if I see it in time. I am glad to hear that the 'Entomologist' progresses favourably, and I hope it may continue to do so. (*Rev.*) *J. Greene; 49, Stephen's Green, Dublin, December* 9.

Mould on Pupæ.—Can you tell me the reason of mould appearing on the pupæ of Lepidoptera? I have now some pupæ of S. Ocellatus, Ligustri, &c., and on the pupæ I find a lot of whitish mould (I have them on some soil covered with about five inches of moss). If you could tell me the reason and the remedy, in the next number of the 'Entomologist,' I should feel extremely obliged.—*S. J. Barnes; Trafalgar Road, Moseley, December* 14, 1867.

Keeping Larvæ through the Winter.—I have some larvæ of Orgyia fascelina, Bombyx Rubi, B. Quercus, and Angerona prunaria, all of which I find hybernate as larvæ. Will you kindly tell me the best way of keeping them alive during the winter, and how soon they will lay up, as I am anxious to breed them and keep them alive?—(*Miss*) *J. Pycroft; 18, Paultons Square, Chelsea, December* 19, 1867.

[The larvæ of Bombyx Rubi must be placed out-of-doors, exposed to all weathers, throughout the winter: the others may be left in the usual breeding-cages. All hybernating larvæ retire as soon as the leaves of their food-plant fall.— —*E. Newman.*]

Answers to Correspondents.

Names of Moths.—1, Plusia Gamma, the silver Y; 2, Cosmia trapezina; 3, Camptogramma bilineata, the yellow shell; 4, Melanippe subtristata, the common carpet; 5, Hydrocampa stagnalis. Please send your real name in future, for my own guidance, not for publication unless you wish it.—*E. Newman.*

Names of Coleoptera.—Would you kindly inform me, through the 'Entomologist,' the names of the four beetles enclosed, according to number?—*E. T. L.*

[Your insects are—1, Bembidium bruxellense; 2, Balaninus pyrrhorynchus; 3, Omalium riparium; 4, Orchestes Fagi.—*John A. Power.*]

Works on European Butterflies.—May I ask you if you can recommend 'A Manual of European Butterflies,' by W. F. Kirby, published, I think, in 1862; or if you know any better English work on European, and more especially Swiss, butterflies?—*W. D. Robinson; 2, Shandwick Place, Edinburgh.* [It is the only work of the kind that I know, and I should suppose it to be very useful.—*E. Newman.*]

Several long lists of captures unavoidably stand over.

Name of a Moth.—Last season produced a chrysalis, in a yellow cocoon, not unlike that of Zygæna Filipendulæ, but perhaps longer and more pointed. Early in May appeared a delicate brown, long-winged moth, which no Cambridge entomologist had ever seen, and which I was unable to name. From description, &c., Mr. Bond believes this to be Xylomiges conspicillaris. The stigmata are pretty clearly defined, and there is no patch of any other colour than the ground colour, but merely slight markings, or rather marblings. The stigmata are a little darker than the rest.—(*Rev.*) *A. H. Wratislaw; Bury St. Edmunds, November* 5, 1867.

Change of Address.—J. R. Wellman, from 13, Cavendish Road, to 3, South Ville, Wandsworth Road, S.

Change of Address.—Edwin Birchall, from College House, Bradford, to Aire-dale Cliff, Newlay, near Leeds.

Change of Address.—Frederick Bond, from 21, to 203, Adelaide Road, Haverstock Hill.

Duplicates, Desiderata, &c.

Duplicates.—L. Sinapis, T. Pruni, T. Quercus, M. Cinxia, L. Argiolus, H. Paniscus, P. Statices, C. Villica, A. Urticæ, A. Luctuosa, S. Undulata, H. Crassalis, S. Illustraria, P. Margaritalis, L. Phragmitidis. *Desiderata.*—P. Cratægi, C. Hyale, L. Acis, H. Actæon, C. Porcellus, M. Bombyliformis, N. Senex, L. Muscerda, L. Pygmæola, L. Caniola, L. Quadra, O. Cœnosa, D. Coryli, E. Versicolor, E. Apiciaria, A. Prunaria, P. Syringaria, E. Fuscantaria, T. Consonaria, P. Trepidaria, G. Smaragdaria, N. Chaonia, C. Ocularis, C. Flavicornis, C. Ridens, A. Leporina, &c.—*W. Jagger; St. Ives, Hunts.*

Foreign Coleoptera.—I have a large collection of foreign Coleoptera to exchange for British Lepidoptera.—*Id.*

Duplicates and Desiderata.—I have larvæ of Porphyrea and a few pupæ of L. Carpini, for larvæ or imagos of other species. Applicants not hearing from me within one week may conclude their offers are not accepted.—*A. Hopps; Old Lane, Halifax.*

Pupæ.—Pupæ of any butterflies or moths will be very acceptable to me. I will gladly pay postage of any that may be sent me.—*W. D. Robinson;* 2, *Shandwick Place, Edinburgh.*

Duplicates of Pupæ for Exchange.—I have pupæ of S. Carpini, which I shall be glad to exchange for other pupæ.—*H. McDowall; Kettering.*

Duplicates.—I have a number of duplicate imagos, which I should be glad to exchange for pupæ of any species not common everywhere, more particularly for any Sphingina or Notodonta (except Camelina), Carpini, Callunæ, &c.—*S. A. Davis;* 4, *Durham Place West, Seven Sisters' Road, London.*

Duplicates.—M. Cinxia, H. Paniscus, T. Pruni, P. Statices, C. Villica, S. Undulata, A. Herbida, A. Luctuosa, A. Tincta, H. Suasa, P. Chi, H. Crassalis, S. Sticticalis, P. Margaritalis, C. Pinetellus, R. Formosella. All are fine and well-set; no others will be exchanged. An envelope, with address, for a reply.—*William L. Horley, Hoddesdon, Herts.*

Duplicates.—P. Machaon, A. Galathea, V. Cardui, P. Corydon, P. Adonis, A. Villica, C. Dominula, L. Monacha, L. Salicis, A. Gilvaria, L. Didymata, S. Undulata, for which I should be glad to receive offers of exchange.—*E. Barlow;* 4, *Bath Place, Haggerstone.*

Duplicates. — C. Edusa, V. Cardui, M. Cinxia, M. Stellatarum, S. Ligustri, C. Dominula, C. Furcula, N. Camelina, X. Cerago, Citrago, Croceago, Gilvago, Silago, Aurago, Xerampelina, Ferruginea, Rufina, Fulvago, Trapezina, E. Lichenia, Æthiops, H. Contigua, Rectilinea, Atriplicis, Suasa, Thalassina, A. Puta, Præcox, Ravida, Valligera, Obelisca, Putris, and many Geometridæ; also P. Apollo, Podalirius. *Desiderata.* — P. Arion, Ægon, L. Sibylla, A. Adippe, M. Athalia, Artemis, V. C-Album, Polychloros, S. Davus, S. Paniscus, T. Myopæforme, P. Globulariæ, N. Senex, N. Dromedarius, Ziczac, E. Russula (female), O. Gonostigma, O. Coryli, C. Castrensis, T. Cratægi, Z. Trifolii, E. Versicolor (female), G. Arundinis, N. Hispidaria.—*G. P. Shearwood; Cedar Lodge, Stockwell, S.*

Duplicates.— H. Defoliaria, H. Aurantiaria, L. Adonis, L. Corydon, V. Cardui, L. Loniceræ, S. Semele, L. Dispar, C. Dominula, O. Potatoria, P. Meticulosa, C. Vaccinii, F. Piniaria, T. Juniperata, C. Spartiata, &c. *Desiderata.*—E. Cassiope, T. Pruni, N. Lucina, H. Paniscus and Comma, A. Atropos, L. Asellus and Testudo, N. Cucullatella, Cristulalis, &c. —*G. Elisha; 2, Cross Street, Ashley Crescent, City Road, N.*

Duplicates. — A. Cardamines, G. Rhamni, C. Edusa, A. Aglaia, A. Euphrosyne, A. Selene, V. Cardui, A. Galathea, S. Ægeria, S. Semele, S. Hyperanthus, L. Ægon, L. Agestis, L. Adonis, L. Corydon, L. Alsus, L. Argiolus, T. Tages, S. Populi, E. Jacobææ, C. Dominula, C. Villica, V. Maculata, H. Pennaria, F. Piniaria, S. Undulata, A. Citraria, A. Gilvaria, L. Marginata, H. Leucophearia, H. Aurantiaria, H. Defoliaria, C. Brumata, O. Dilutata, C. Diluta, T. Juniperata, C. Vaccinii, M. Oxyacanthæ, E. Mi, E. Glyphica, H. Rupicapraria. *Desiderata.*—L. Sinapis, P. Cratægi, P. Daplidice, A. Paphia, A. Adippe, A. Lathonia, M. Artemis, M. Cinxia, C-Album, V. Polychloros, V. Antiopa, L. Sibylla, A. Iris, E. Cassiope, E. Blandina, C. Davus, T. W-Album, P. Hippothoe, L. Acis, L. Arion, M. Lucina, H. Paniscus, H. Actæon. — *Charles Boden;* 127, *Tooley Street.*

Duplicates. — A. Galathea, B. Quercus, H. Abruptaria, A. Citraria, T. Juniperata, C. Fluviata, N. Camelina, T. Fimbria, N. Festiva, O. Ypsilon, H. Rostralis, pupæ of S. Tiliæ, &c. *Desiderata.*—My wants are very numerous: I should be glad of single examples of *local* Diurni, or in the following

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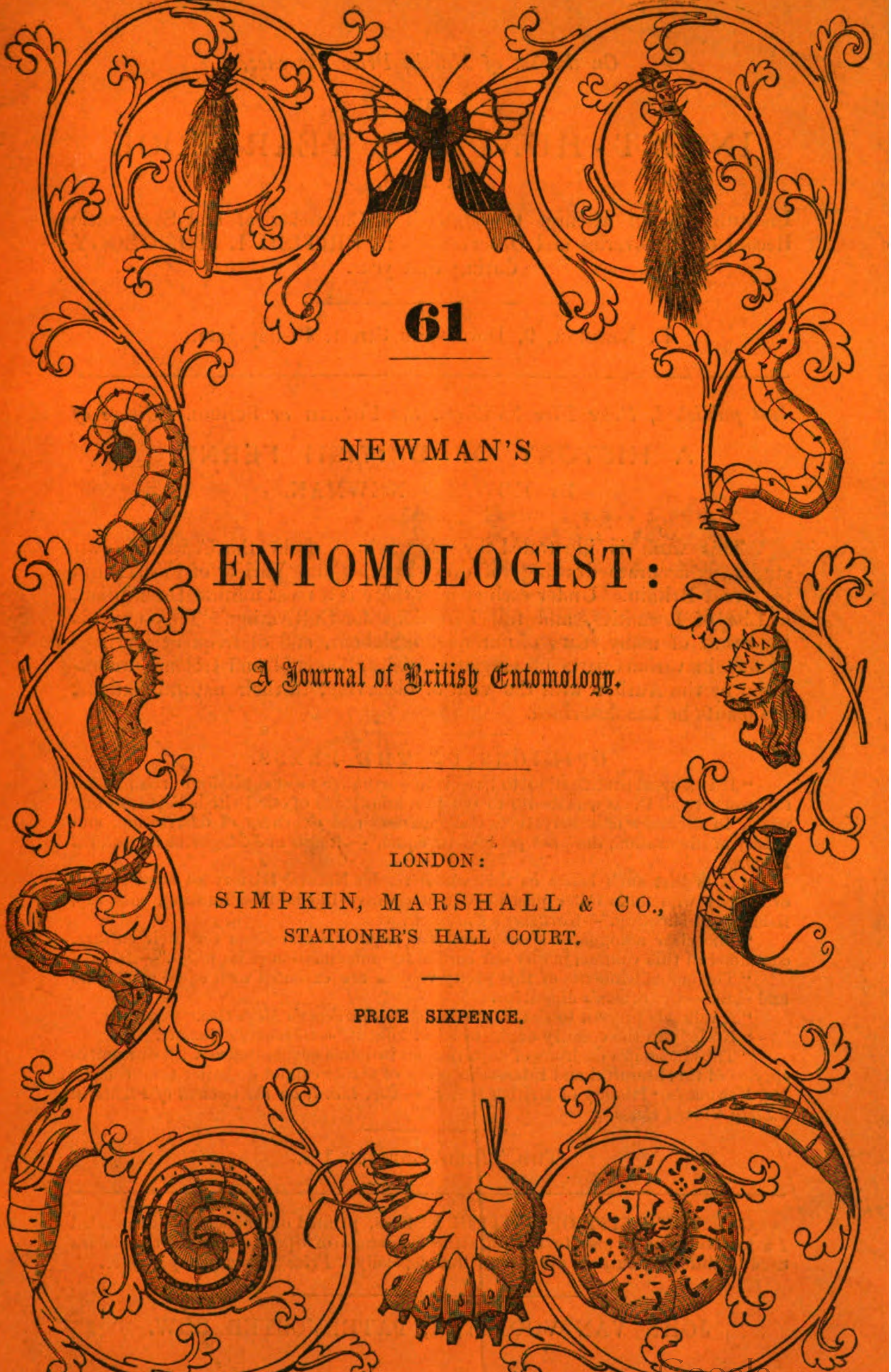

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Captures of Lepidoptera in Morayshire.
By George Norman.

It will be seen from the following list of captures that my attention has been exclusively directed to the Noctuæ. A few other insects certainly were noted, but mostly common species; for instance, Chelonia Plantaginis and Arctia fuliginosa were both common enough, while in the Altyre Woods Endromis versicolor was seen in great abundance; I succeeded, however, in capturing only four specimens, one male and three females, the latter sitting quietly on the bare birch twigs in April. The males were far too lively for me, although I have known the day when I could have run them down. Some eggs were procured, but, owing to my want of knowledge in rearing the young larvæ, only one lived into the pupa state. Erebia Medea, Hipparchia Semele, Chortobius Davus, Pyrameis Cardui, P. Atalanta, Argynnis Selene, A. Euphrosyne, and Thecla Rubi, were all abundant in suitable localities; and Vanessa Io was, I believe, seen on one occasion in Altyre Forest. Smerinthus Populi abounded in the larva state, those found on Populus alba wonderfully matching the colour of its food-plant, being of a pale glaucous-white hue, sometimes blotched with red. Sphinx Convolvuli was, I believe, frequent throughout the county; I had three specimens sent me, which had been captured hovering over Petunias. Macroglossa Stellatarum was observed on several occasions in similar localities. Amphydasis betularia and Odontopera bidentata were both very abundant. All the British species of Hepialus were taken, eight specimens of H. velleda occurring at rest in the crevices of birch trees in Altyre Woods. Cossus ligniperda larvæ were abundant all over the country, doing great mischief to the birch and oak trees. I do not recollect whether a Cossus-infested birch has been before noticed as an excellent trap for Noctuæ: one small tree on my hunting-ground was nightly visited by hosts of moths, and, what is very remarkable, certain species occurred there and nowhere else; for instance, I only took five specimens of Noctua glareosa, and every one was taken from this small wounded birch, which also yielded in one night six specimens of Epunda nigra. Another year I intend collecting a pint or two of the sap in the early spring, to mix with my sugar as an improvement. The larvæ of Bombyx Quercus were very abundant on heather; one specimen only, out of some twenty or more, yielded the perfect insect on the 20th of July; the others are all now in the pupa stage. One pupa of Pœcilocampa Populi was taken at root of poplar. Saturnia Carpini was very common, but smaller and less richly coloured than Yorkshire specimens. Chesias spartiata was very abundant.

The subjoined list of Noctuæ will show that this locality is a promising one. Being, however, my first season's collecting, after an interval of some twenty-five years, I was imperfectly read up in the modern system of collecting larvæ and pupæ; otherwise the list of species might have been considerably augmented. A notable fact was the remarkable earliness of most of the insects, which, with few exceptions, were fully four or five weeks in advance of their usual time of appearance, owing, no doubt, to the hotness of the season. The date is that on which the first specimen was observed.

Thyatira batis. 20th June. Scarce. Two specimens at raspberry-blooms.

Cymatophora duplaris. 27th June. Frequent at sugar.

C. or. 20th June. Several at sugar.

C. flavicornis. 30th March. At rest. Many larvæ afterwards, on birch.

Acronycta tridens? 27th June. At sugar. I suspect I am right in referring this to tridens, being darker than Psi.

A. Psi. 4th July. Not uncommon at sugar. At rest on birch trees.

A. leporina. 25th May. At rest in Altyre Forest. Afterwards several larvæ were taken from birch.

A. Ligustri. Bred from pupæ found on ash trees.

A. Rumicis. 25th May. Two at rest.

A. Salicis. 17th June. Rare at sugar.

Acronycta Myricæ. 16th June. Rare. One specimen at rest near Dallas.

Leucania lithargyrea. 27th June. Very abundant at sugar.

L. conigera. 4th July. Not uncommon at sugar, and flying over Lychnis vespertaria.

L. impura. 4th July. Not common at sugar.

L. pallens. 3rd July. Very abundant at sugar and flowers.

Hydrœcia nicticans. 7th Aug. Not uncommon at sugar.

H. micacea. 2nd Aug. Several specimens at sugar.

Xylophasia rurea. 25th May. Common at raspberry-blooms and sugar.

X. polyodon. 23rd June. Very abundant at sugar and at rest.

Charæas Graminis. I took this, last autumn, on ragwort.

Luperina testacea. 18th Aug. Abundant at light.

Mamestra anceps. 25th June. Not unfrequent at sugar.

M. brassicæ. 23rd June. Occasionally at sugar and at rest.

Apamea basilinea. 2nd June. Very abundant at raspberry-blooms.

A. fibrosa. 29th July. Rare at sugar.

A. oculea. 2nd July. Swarming at sugar.

Miana strigilis. 6th July. Not common at sugar.

M. fasciuncula. 11th June. Very abundant at sugar.

M. literosa. 25th July. Common at sugar.

Caradrina cubicularis. 19th June to October. Over flowers, at sugar, and swarming in hay-fields.

Rusina tenebrosa. 7th June. Very common, flying over raspberry-blossom, also at sugar.

Agrotis valligera. 27th July. Not abundant at sugar. Several beautiful varieties.

A. suffusa. 24th July until October. Not uncommon at sugar.

A. Segetum. 25th July. Not common at sugar.

A. lunigera. 28th July. Rare at sugar.

A. exclamationis. 24th June. Not common at sugar.

A. corticea. 26th June. Not common at sugar.

A. nigricans. 17th July. At rest and at sugar, not rare.

A. Tritici. 26th July. Frequent at sugar.

A. agathina. 14th Aug. Not uncommon on heaths, but very difficult to take.

Agrotis porphyrea. 8th June. Swarming over heather. Pupæ also abundant under moss on heaths.

A. præcox. 7th Aug. Rare at rest.

A. pyrophila. 1st July. Rare.

Tryphæna janthina. 25th July. Not uncommon, both at lime-blossom and at sugar.

T. fimbria. 18th July. Common at sugar.

T. subsequa. 1st Aug. Not uncommon at sugar. Unfortunately I did not recognize the moth in time to take many specimens. I saw five on one round, but did not box one.

T. orbona. 16th June. Swarming at sugar, varying both in colour and markings to an extraordinary degree.

T. pronuba. 23rd June. Abundant at sugar.

Noctua glareosa. 26th Aug. Several at a birch tree pierced with Cossus.

N. depuncta. 24th July. Not uncommon at sugar.

N. augur. 1st July. Frequent at sugar.

N. plecta. 21st July. Rare, flying over grass.

N. C-nigrum. 22nd June. Not uncommon at sugar.

N. triangulum. 4th July. Rare at sugar.

N. brunnea. 12th June. Frequent at raspberry-blooms and sugar.

N. festiva. 26th July. Not uncommon at sugar.

N. conflua. 6th July. Not rare at sugar.

N. Dahlii. 27th July. Swarming at sugar, and presenting an extraordinary range of variation in colour, from bister-brown to dark maroon-purple; scarcely two are precisely alike in markings.

N. bella (Rubi). 1st Aug. Common at sugar, varying much in colour.

N. umbrosa. 17th July. Rare at lime-blossoms, also at sugar.

N. baja. 22nd July. Common at sugar.

N. neglecta. 26th July. Not uncommon at sugared rags laid on heather.

N. xanthographa. 20th July. Swarming at sugar, and varying much in colour and markings.

Trachea piniperda. 28th March. Very common at sallow-blooms, ranging from brick-red to light green and gray. Pupæ under moss and pine-needles.

Tæniocampa gothica. 26th March. Common at sallows, also at sugar occasionally.

T. rubricosa. 17th April. Not common, on sallows, Califer Hill.

T. instabilis. 27th March. Frequent at sallows.

T. stabilis. 28th March. Swarming at sallows, and often at sugar.

Orthosia maculata. 12th Sept. Not common at sugar.

O. rufina. 27th Aug. Very abundant at sugar.

O. Litura. 12th Aug. Swarming at sugar.

Cerastis Vaccinii. 13th Sept. Swarming at sugar. Very variable in markings and colour.

C. spadicea. 16th Sept. Plentiful at sugar.

Scopelosoma Satellitia. 7th Sept. Swarming at sugar.

Xanthia cerago. 6th July. Not common at sugar.

X. ferruginea. 28th Aug. Frequent at sugar.

Euperia fulvago. 8th Aug. Not rare at sugar.

Cosmia trapezina. 23rd July. Swarming at sugar.

Dianthœcia capsincola. 29th June. Not uncommon, hovering over Lychnis vespertina, in the capsules of which the larvæ were found in abundance.

D. Cucubali. 19th Aug. One bred from larvæ found on Lychnis vespertina.

Polia chi. 31st July. Very abundant at rest on pine trees, also at sugar.

Epunda nigra. 12th Aug. Very abundant at sugar.

Miselia Oxyacanthæ. 8th Sept. Frequent at sugar.

Agriopis aprilina. 16th Sept. Frequent at sugar.

Phlogophora meticulosa. 23rd Sept. Frequent at sugar.

Euplexia lucipara. 1st July. Rare at sugar.

Aplecta occulta. 15th Aug. Rare at sugar.

A. nebulosa. 13th Aug. Rare. Saw one at sugar, but missed it.

Hadena adusta. 30th May. Rare at rest.

H. protea. 5th Aug. Swarming at rest on pine trees, also at sugar.

H. oleracea. 4th July. Rare at sugar.

H. thalassina. 22nd June. Not common at rest and sugar.

Calocampa vetusta. 22nd Aug. Common at sugar, but not nearly so frequent as the next. Last season C. exoleta was the least frequent of the two.

Calocampa exoleta. 3rd Sept. Swarming in vast numbers at sugar. One night I counted more than two hundred in one round of my trees. It also occurred frequently in the spring, at sugar and sallows.

Xylina rhizolitha. 28th Sept. Rare at sugar.

Cucullia umbratica. 1st July. Rare, hovering over Lychnis.

Anarta Myrtilli. 8th June. Common, flying over heather.

Brephos Parthenias. 5th April. Very abundant in Altyre Forest, flying over birch trees.

B. notha. 16th April. Same locality as the above, but not so common.

Abrostola urticæ. 26th June. Rare on raspberries.

Plusia chrysitis. 16th July. Rare, flying over flowers.

P. festucæ. 30th June. Rare, flying over Lychnis vespertina.

P. Iota. 25th June. Rare over flowers.

P. pulchrina. 24th June. Common, flying over Lychnis vespertina.

P. Gamma. 25th May. Very abundant over flowers; occasionally at sugar.

Amphipyra Trapopogonis. 18th July. Abundant at sugar and lime-blossom. I have frequently seen and killed field-mice at my sugared trees, four or five feet from the ground; squirrels also came to lick off the sugar, but only by day.

Stilbia anomala. 12th Aug. Not uncommon at sugar.

Phytometra ænea. 16th May. Not uncommon, flying over heather.

G. Norman.

The Life-history of Dysthymia luctuosa.—The eggs are laid in May, or early in June, on the climbing stems and flower-buds of the common bind-weed, and the young larvæ emerge in about ten or twelve days: the head is then much larger in proportion to the body than in more advanced life, but not so large as is generally the case in infant larvæ: both the head and body are furnished with a considerable number of hairs, which are far more conspicuous at this early period than a week or ten days later: the body is of nearly equal substance throughout, and the sides are nearly parallel: they feed almost entirely by night, and principally on the unexpanded flower-buds of the bind-weed, hiding themselves by day near the surface of the ground, and remaining motionless during daylight. The full-grown larva rests in a perfectly straight position, so far as the sinuosities of the plant will allow, on the slender stems of Convolvulus arvensis (the common field bind-weed), the legs holding the stem slightly, but the claspers more firmly attached, the anal pair of claspers stretched out behind: when annoyed it falls to the ground, rolled in a lax and imperfect ring, the head turned on one side: the head is exserted and porrected; it is of almost exactly the same width as the 2nd segment, and emits a considerable number of straight hairs: the body is elongate and rather slender; it is attenuated towards the anal extremity; on the 2nd segment is a glabrous shining plate of a semicircular figure, the convex side being posterior; the remaining segments are distinctly marked, and each is slightly swollen in the middle. The colour of the head is pale rather shining brown, with eight irregular longitudinal series of amorphous spots; the plate on the 2nd segment is dingy brown, intersected by three paler stripes; the dorsal area of the body is striped with brown of two shades, there being three pale and four darker stripes; the paler stripes are medio-dorsal and lateral, the darker stripes alternating with them, and each darker stripe having in each segment a paler wart-like spot, which emits a hair; the lower dark stripe on each side is compound or composed of several minor stripes; the ventral is decidedly paler than the dorsal area, and the division between the two is abrupt and clearly defined; there is a medio-ventral series of black spots, connected by a slender and indistinct stripe of the same colour; the black spots are most conspicuous on the 5th, 6th, 7th and 8th segments: the legs are rather long, pale semitransparent brown, with black rings; the claspers are nearly concolorous with the ventral area. I am indebted to Mr. D. T. Button for a most liberal supply of these larvæ, which were full-fed on the 14th of June, and then went down to undergo pupation on or under the surface of the earth. Since this description (intended for the July number of the 'Entomologist') was in type, Mr. Buckler has published a description of the larva in the 'Entomologist's Monthly Magazine,' compiled with his usual care and skill; but he introduces an observation that seems scarcely needed. "The young larvæ," says Mr. Buckler, "at first appeared to be veritable loopers, twelve legs only being visible; but as they grew larger the other legs became apparent, though still in walking they did not use the first pair of ventral legs." Mr. Buckler must have so frequently observed these characters in the young larvæ of Mania typica, Mamestra Brassicæ, and a host of other infant larvæ of Noctuæ, that he will at once see, although strictly correct in the case of the present species, it is by no means distinctive or peculiar. I make this remark not by way of criticism, but rather for the sake of introducing a second and collateral observation. The larva of Acontia is characterized by having six claspers only, whilst the species now under consideration has ten; and two types of larvæ differing in so primary a character cannot with any propriety be called by the same generic name; I have therefore proposed another for the species familiarly known as Luctuosa. At the same time I must disclaim every idea of merit as a discoverer, for Guenée has not merely described this interesting larva with minuteness and exactness, but invites especial attention to the fact of its possessing the normal number of claspers. He says:—"I find in the larva of Luctuosa a very curious, and I may say unique, exception among the Noctuelites; Acontia luctuosa has a larva entirely different from that of all other Acontiæ, and provided with sixteen feet. * * * Were I as exclusive as I have been supposed in making the characters of the perfect insect subordinate to those of the larva, I should not have hesitated to refer to the family Catephidæ a species so strikingly exceptional. * * * I must, however, be allowed to remark that the exception which this species offers is so remarkable and so strongly pronounced, that I think we ought to wait for a more perfect acquaintance not only with this species, but more especially with the earlier states of others in both the neighbouring families, before we pronounce any decided opinion as to its natural situation."—*Edward Newman.*

A Life-history of Phyllotoma microcephala, Klug.—The earliest evidence of the presence of this larva occurs about the 20th of June: if we examine those leaves of Alnus glutinosa (the common alder) which are frequented by the perfect insects, a minute brown-coloured spot, immediately followed by a pale green slightly dilated blotch, will be detected on one or other of the leaves; some of the leaves may possibly be observed to contain four or even five of the little mines, which are, I believe, more often found at the tip or sides of the leaf than in the other parts. On extracting the larva it is observed to be about a line and a half in length, and is possessed of six legs and sixteen claspers, fourteen of these being ventral and two anal; the 4th and the 12th or penultimate segments are apodal: the head is brown, with darker markings; the back of the 2nd segment has a large dark brown plate, and the dorsal surface of the 3rd segment is decorated with a narrow plate of a similar colour to that on the 2nd segment; these two plates are divided down their centres by a dorsal line: the body is white, with a faint tinge of green imparted to it by the greenish fluid contained within the dorsal vessel; the mouth is dark brown, the head pale brown, the colour of the 2nd segment being dark brown, and on either side of this segment is a little white tubercle; the 3rd segment has a circular black spot in its centre; the 4th segment also possesses a black central spot, as do likewise the 5th and 6th; the thoracic or true legs are black, the ventral claspers white, the anal ones being nearly surrounded by a black band: when the larva moults for the first time, the small black spot previously noticeable on the ventral surface of the 6th segment entirely disappears. Like others of this genus, the larva feeds whilst lying on its back: when irritated there is no emission of fluid from its spiracles: after each moult the markings gradually reappear, and settle down to their proper tone, the exuviæ of the larva remaining within the mine: when this larva is about half or three-quarters grown, the under side of its 3rd and 4th thoracic segments has additional markings; the 3rd segment has one, and the 4th has two, small black spots on each side near the legs; and the bases of the inner margins of the six true legs are partly surrounded by a semicircular black-coloured mark or band: by the time the larva is full-fed it forms a large brown blotch in the leaf, both sides of the leaf near the mine becoming discoloured, the upper part by far the most so. The larva, having quite satisfied its hunger, throws off its integument for the fourth time, and appears in a new dress; its mouth is now tipped with dark brown, its head and the whole of its body being of a beautiful pale green, and its dorsal vessel charged with a faint orange-coloured fluid; the ventral surface of the thoracic segments is spotless, and the band on the anal claspers has a faint brownish tinge: when the larva has arrived at this epoch of its existence it remains for a time in a quiescent state; eventually, however, it splits open its mine, and, falling to the ground, buries itself in the earth. We may, however, occasionally meet with an instance where the larva has entered upon its pupa state within the mine itself: it is very apt to pursue such a course when confined in a breeding-jar. In constructing its cocoon the larva first describes a circle with its body; it then appropriates a portion of the upper and under cuticle of the mined part of the leaf, the inner margin of the circular-shaped abode being fastened down with silk, and the larva afterwards spinning a thin layer of silk over the whole of the interior: so far as I have yet been able to learn, this mode of proceeding applies with equal force to all the various leaf-mining Tenthredinideous larvæ that occasionally form their cocoons within the mined leaves. Its usual mode of passing the pupa state is to enter the ground; but on whatever course the larva may decide in this respect, its parasite waits patiently until the Tenthredo larva has formed its cocoon before it quits its body and spins its own cocoon inside that of its victim. Like the larvæ of Phyllotoma melanopyga and P. Tormentillæ, this species may be collected and the perfect insects bred from the date of their appearance till the end of October: at the end of September the imagos, as a rule, cease coming out for the season, the little Tenthredos appearing the following spring. The larvæ destined to produce imagos the following year, remain unchanged till the early part of the next season before entering the pupal state. The larvæ are common on the alders growing at Shirley, Surrey.—*Charles Healy; 74, Napier Street, Hoxton, N.*

Entomological Notes, Captures, &c.

Colias Hyale. — During the end of July and commencement of August last, this species was the commonest butterfly to be seen at Marsh Bay, Margate, where the specimens were flying in hundreds. It was a lovely sight to see these handsome creatures settled on the flowers, and swaying to and fro in the wind, the rich gold colour of the under side contrasting beautifully with the purple flowers of the lucerne. My specimens vary very much in size, the largest being two inches and three lines in expanse, and the smallest only one inch and five lines. A few specimens are richly shot with the colour of C. Edusa, and one, captured by my wife, is of the pale greenish hue peculiar to the female, but at the base and along the costa is bright yellow, forming a very peculiar-looking variety. The ordinary type of Hyale was abundant all over the Isle of Thanet. Wherever a little patch of lucerne was to be seen, Hyale was sure to be there, even close to the houses. Its head-quarters, however, were decidedly at Marsh Bay, which lies between Birchington and Margate, being about a mile and a half west of Margate. Three of our number were unfortunately invalids; consequently, only having one good hand, we were unsuccessful in capturing more than about eight hundred specimens! It would have been easy to take it by thousands. We did not discover this locality till it was a little too late; consequently many of our specimens are worn.—*H. Ramsay Cox; West Dulwich, S.E.*

Unusual time for the appearance of Stauropus Fagi.—At the first quarterly meeting of the West London Entomological Society, held on the 4th of November last, Mr. Dow exhibited a specimen of Stauropus Fagi, which he had from the chrysalis the week previous. Believing this to be a case of unusual occurrence, I thought it worthy of being recorded.—*E. W. Timms, Secretary of the West London Entomological Society; Harrow Road.*

Heliothis peltiger at Plymouth.—I took a fine specimen of H. peltiger on the 26th of September last; it was in the company of P. Gamma, feasting on the flowers of Mentha sylvestris.—*G. C. Bignell.*

Pupa of Trachea piniperda.—Touching the pupa of Trachea piniperda, described at p. 355 of 'British Moths,' I had always thought the larvæ made up in the crevices of the bark of pine trees, and examined hundreds of trees in vain. I then got a hint that the pupæ would be found under the last year's layer of needles and moss, and then I had no difficulty, but found them in abundance. You have just to roll up the carpet-like layer, and the pupæ are easily found, generally at about a foot distant from the tree.—*G. Norman; Cluny Hill, Forres.*

Erebus odora in Jamaica. — A solitary specimen of this large and beautiful moth was taken here lately, by a negro, resting with outspread wings on the under side of the lower flooring of a house. It is the first of the species I have observed on the north side of the island, and is a remarkably fine one (a female), measuring 7¼ inches from tip to tip of upper wing. — *Alwin S. Bell, 3rd West India Regiment; Falmouth, Jamaica, October* 5, 1868.

Obituary.

Death of Mr. Shuckard.—William Edward Shuckard, one of the most accomplished entomologists this country has produced, died at the Oval Road, Kennington, on the 10th of November, 1868, aged sixty-five years. His name will long be remembered in connexion with his admirable translation of Burmeister's 'Handbook of Entomology,' and his 'Essay on the Indigenous Fossorial Hymenoptera of Great Britain.' The latter, published in 1837, is without comparison the most perfect entomological monograph ever published in this country: the Latin diagnosis, or *nomen specificum*, of each species is a model of terseness and completeness. Many detached papers in Natural-History journals attest not only the extensive range of his attainments, but also the philosophical character of his mind. Mr. Smith, also universally known by his works on Hymenoptera, and one of Shuckard's earliest acquaintances, has most kindly furnished me with the following particulars of his early life. W. E. Shuckard was the eldest son of Mr. Shuckard of Brighton, who for many years was the landlord of the 'Old Ship,' at that time the principal hotel in Brighton. Shuckard's father was a German, and, having at one time realized a considerable fortune, he determined on giving his son the benefit of a most liberal education. Shuckard was accordingly sent to first-class schools, and became an excellent scholar and a great reader, more particularly of old and rare books. Eventually the time came for him to choose a business or profession; the church and the bar were talked of, but his taste was for books, and nothing would suit him but the business of a bookseller. Accordingly he was placed in the house of Baldwin, Craddock & Joy, of Paternoster Row. "At this time," writes Mr. Smith, "I was articled to Shuckard's uncle, the celebrated landscape engraver, who lived in Soho Square, and young Shuckard was to lodge at his uncle's during his apprenticeship. So matters went on. Shuckard was a most laborious reader; we occupied the same room, and he used to read whilst I was in bed; sometimes, if he was engaged upon a novel of Scott's, fresh from the press, and in fact before it was issued to the public, I listened to his whispering readings, for he dared not read aloud, because his uncle's room was beneath our attic story: these readings kept me awake, but when he was deep in his more favourite works, books of antiquities, I must confess to their somniferous effects upon myself. One book was of a most composing character, and it was one in which Shuckard took great delight, Butler's 'Anatomy of Melancholy:' he dropped upon some expensive edition of this book, and was so delighted with his treasure that in reading some favourite passages he would forget himself, and frequently read so loud that his uncle was awoke by his midnight readings, and pounced in upon him in the very act. Several times were these discoveries made, and so determined was his uncle to put a stop to these proceedings that a plan was adopted of sending the servant up for our candle, which was duly put out, and a little lamp was lighted and substituted for the lost candle as soon as we heard his uncle safe in his own room; the window was darkened by hanging one of the bed-curtains before it, and every chink of the door—top, bottom and sides —was darkened, not forgetting the keyhole. All, however, proved useless in the long run. The termination was my being awoke one night, and seeing Shuckard grasped by his uncle, both in a boiling rage, and a dismissal next day threatened. Accordingly Shuckard left, and for some time lodged at Bateman's Buildings, Holborn, opposite Furnival's Inn, where his midnight readings caused him to become a late riser in the morning, and a very irregular attender to his duties in Paternoster Row. Complaints followed, and three times was he dismissed, the last time for ever. Shuckard now went to reside at Brighton with his father, who resolved upon starting him there as a bookseller, but he was anxious that his son should acquire a knowledge of the German book trade; he therefore sent him to one of the first firms in Germany (I think in Frankfort). Here Shuckard remained some time, after which he was to begin life as a bookseller. This, however, was not exactly to Shuckard's taste: he thirsted for literary fame. His first essays were as a sort of sub-editor of a Brighton paper; but his efforts were very intermittent, and having much time on his hands he used to employ it in rambling over the downs, and on one occasion while there, his attention was by mere accident attracted by some insects scrambling up a sandy bank. One of these he caught; it was Cicindela campestris: he admired its beauty, went again and again to the downs, and there, on the sandy banks, saw bees burrowing. His hymenopterous studies dated from these solitary rambles on the Sussex downs. He soon afterwards procured a copy of Kirby's 'Monographia,' and from this time his whole energies were devoted to Hymenoptera, and in this branch of Entomology no one has laboured more successfully." Mr. Shuckard's books are as under:—

Translation of Burmeister's 'Manual of Entomology,' with additions and notes by the Author. London, 1836.

Essay on the Indigenous Fossorial Hymenoptera of Great Britain. Demy 8vo. 1837.

Elements of British Entomology. London, Baillière, 1839. Demy 8vo, with 50 wood-cuts.

Monograph of the Dorylidæ, published in the 'Annals and Magazine of Natural History,' 1840.

On the Aulacidæ, a Family of Hymenoptera Pupivora, published in the 'Entomologist,' Vol. i. p. 115. June, 1841.

Coleoptera delineated; by William Spry; the letter-press by W. E. Shuckard.

Essay on the Indigenous Bees of Great Britain. 1867.

Duplicates, Desiderata, &c.

Duplicates for Exchange. — C. Davus, T. Fimbria, E. Viminalis.—*W. C. Marshall; Trinity College, Cambridge.*

Duplicates. — Pupæ of Machaon and Pygæra Bucephala. Imagos of Acronycta Aceris, Miselia Oxyacanthæ and M. Aprilina, Cerastis Spadicea, Cheimatobia Brumata, Macroglossa Stellatarum, Calocampa Exoleta, Cerura Vinula. *Desiderata.*—Pieris Cratægi and Daplidice, Leucophasia Sinapis, Thecla Rubi, all the Hesperiæ, all the Zygænæ, five or six Bombyces, &c.—*F. Norgate; Sparham Rectory, Norwich.*

Duplicates. — I have good and well-set specimens of the following Lepidoptera to spare: — Edusa, Hyale, Sinapis, Sibylla, Cardui, Paphia, Adippe, Aglaia, Euphrosyne, Selene, Athalia, Lucina, Quercus, Adonis, Ægon, Alveolus, Geryon, Ligustri (bred), Miniata, Irrorella, Villica (bred), Mendica; Derasa, Batis, Fimbria, Turca, Aprilina, Pyramidea. *Desiderata.* — Actæon, Culiciformis, Formicæformis, Cynipiformis, Apiformis, Arundinis, Muscerda, Caniola, Molybdeola, Stramineola, Quadra, Urticæ, Cœnosa, Coryli, Cratægi, Castrensis, Versicolor, Lacertula, Hamula, Furcula, Bifida, Fagi, Cassinea, Plumigera, Palpina, Cucullina, Carmelita, Dictæa, Dictæoides, Trepida, Chaonia, Dodonæa, &c., &c. Offers will be replied to within a week if accepted.—*Herbert Goss; 8, Goldsmid Road, Brighton.*

Duplicates. — I have still by me a good series of the following, for which I shall be glad to receive offers of imagos or pupæ: — Hyale, Cardui, Ægon, Hyperanthus, Alveolus, Plagiata, Palumbaria, Piniaria, Citraria. — *H. Ramsay Cox; 10, Thurlow Villas, West Dulwich, S.E.*

Duplicates.— I have the following insects, in good condition, for exchange: — L. Sinapis, T. Derasa, T. Batis, T. Fimbria, T. Janthina, A. Aprilina; I have also the pupæ of S. Carpini and S. Tiliæ. *Desiderata.* — P. Machaon, C. Edusa, C. Hyale, or any other local insect; Machaon preferred.—*T. Goodyear; Church Road, Malvern Link.*

Duplicates.—H. Defoliaria, H. Aurantiaria, C. Boreata, H. Pennaria, T. Juniperata, for which I shall be glad to receive offers.—*W. Davis; 31, Cowper Street, City Road, London.*

Duplicates.—I have a number of specimens of H. Boreata (male and female), in good condition and well set, also other species, for exchange. — *G. Elisha; 2, Cross Street, Ashley Crescent, City Road.*

The Black Amphydasis betularia. — In reply to those entomological friends who have written for the black variety of Amphydasis betularia, I beg to say that I never possessed the black variety myself, although I recorded them in the 'Entomologist' for August as having been bred at Middleton. I should have referred the gentlemen writing for them to the parties who possessed them, but they have been disposed of. —*John Thorpe; Church Street, Middleton.*

Captures near Nottingham. — During the past season I have taken the following species within a few miles of Nottingham. May.—L. Petraria, E. Vulgata, H. Abruptaria, O. Bidentata. June.—C. Forficellus, T. Batis, H. Hepatica, L. Comma, C. Cytherea, M. Anceps, M. Persicariæ, A. Nebulosa, A. Herbida, H. Pisi, N. Saponariæ, H. Velleda, P. Iota, P. Chrysitis, D. Cucubali, R. Tenebrosa, E. Punctaria, E. Decolorata, A. Putris. July.—T. Derasa, C. Diluta, T. Fimbria, T. Janthina, X. Scolopacina, A. Nigricans, A. Suffusa, N. Bella, N. Brunnea, N. Dahlii, C. Affinis, A. Triplasia, A. Pyramidea, C. Morpheus, C. Blanda, B. Perla, G. Trilinea, Z. Æsculi, E. Apicaria, X. Zoegana, P. Bipunctidactylus, P. Acanthodactylus, P. Pentadactylus. August.—X. Cerago, L. Testacea, E. Fuscantaria, P. Stratiolata, H. Sylvinus, P. Festucæ, A. Imitaria, H. Thymiaria. September.— C. Miaria, E. Cervinata, A. Rufina, X. Flavago. — *R. E. Brameld; Sneinton, Nottingham, October* 16, 1868.

Evenings at Home. — Fridays, the 4th, 11th, and 18th December, from 6 to 9.—*Edward Newman; 7, York Grove, Peckham.*

W. DOWNING, of Hoddesdon, Herts, has for Sale or Exchange, Hyale, Pruni, Betulæ, Adonis, Paniscus, Geryon, Helveola, Irrorella, Plantaginis, T. Cratægi, Fuscantaria, Papilionaria, Advenaria, Prodromaria, Dealbata, Citraria, Juniperata, Miata, Undulata, Nivearia, Bicuspis, Chaonia, Dodonæa, Littoralis, Impura, Pallens, Elymi, Præcox, Glareosa, Ditrapezium, Croceago, Aprilina, Rhizolitha, Asteris, Pyramidea, Quercana, and many others. Pupæ on sale. Insects and Pupæ bought or exchanged.

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THE ENTOMOLOGIST.

No. 61.] JANUARY, MDCCCLXIX. [Price 6d.

Contributions towards a Life-history of the Pear-fly (*Ceratitis citriperda*). By Edward Newman.

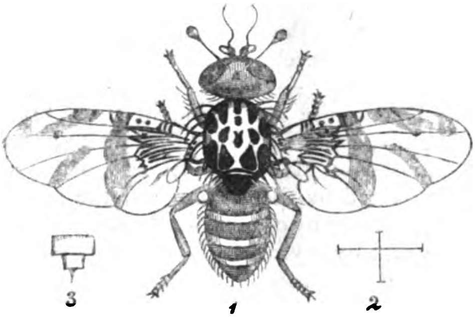

Fig. 1. The male Pear-fly magnified. Fig. 2. The natural size.
Fig. 3. The ovipositor of female.

It will scarcely be reckoned an unwarrantable act if I assume that Mr. MacLeay's once celebrated notice of the orange-fly (Ceratitis citriperda), an insect very destructive to oranges, is altogether unknown to the majority of my readers. This once popular Essay was published in May, 1829, in the 'Zoological Journal,' then under the able editorship of Mr. Vigors. Having been made acquainted with the ravages committed by this insect during the hot summer and autumn of 1868 on our pears, it has become not merely a pleasure, but a duty, to reperuse and reconsider the labours of so accomplished an entomologist as Mr. MacLeay, at however remote a period they may have been written.

In the first place, it seems desirable to draw a clear line of demarcation between the two natural orders of fruits rugose; the clypeus produced, shining and truncate anteriorly, having only a few scattered punctures; the face, along the inner margin of the eyes, with a line of short fuscous pubescence; from the anterior ocellus a shining carina runs to the base of the clypeus. The thorax subopaque, with scattered fuscous pubescence, that on the sides and beneath griseous and very sparing; the floccus at the base of the posterior femora white; the posterior tibiæ have the scopa fuscous above and silvery white beneath; the wings subhyaline, the nervures fuscous. Abdomen oblong-ovate, widest towards the apex and much narrowed towards the base, glossy black and with very delicate punctures, the apical fimbria fusco-ferruginous.

The general aspect of this species is that of a species of Halictus; its produced nasus is a striking characteristic. The species is remarkable in being apparently an enlarged representative of the British Andrena Coitana.

Nomada maculifrons.— Female. Length 4 lines. Ferruginous, with three longitudinal black lines on the thorax; the abdomen spotted with yellow. Head: the antennæ fuscous above; a black macula extends from the insertion of the antennæ to the ocelli, which it encloses; a smooth yellow spot on each side of the clypeus of a somewhat triangular shape; the head otherwise, as well as the thorax, closely and strongly punctured. The mesothorax with three longitudinal lines; the metathorax and the base of the femora black; the metathorax ferruginous on each side; the scutellum ferruginous; the sides of the metathorax with a little cinereous pubescence; the wings subhyaline, their margins fuscous; the tegulæ ferruginous, the nervures fusco-ferruginous. Abdomen ferruginous, with the base and the apical margins of the three following segments black; the second segment has on each side a large subangular yellow spot, a minute one at the sides of the following segment, an interrupted transverse line at the base of the fourth, and a large quadrate yellow spot on the fifth; beneath ferruginous.

This species closely resembles the darker examples of the Nomada ruficornis of Europe, but the smooth yellow spot on each side of the face is never found in any of the European specimens.

Bombus ignitus.—Female. Length 9 lines. Clothed with black pubescence, the three apical segments of the abdomen with rufo-fulvous. The head subovate; the pubescence on the margin of the vertex, on the posterior margin of the scutellum, and on the apical margins of the two basal segments of the abdomen, is sooty black; the four apical joints of the tarsi rufo-testaceous; the wings subhyaline, with a broad fuscous border to their apical margins; the basal joint of the tarsi clothed with short ferruginous pubescence beneath.

There is a species from North China having the same-coloured pubescence as B. ignitus, but it is much larger and has dark fuscous wings; the B. lapidarius of Europe is its closest ally: from that species it differs in being altogether a narrower insect, in the sooty fringes of the abdomen, and in the much darker colour of its wings.

Bombus tersatus.—Female. Length 10 lines. Clothed with fulvous pubescence, that on the thorax with a rufo-fulvous brightness. The head subelongate, its pubescence fulvous, intermixed with black below the insertion of the antennæ; the clypeus naked and shining, its anterior margin fringed with bright fulvous hairs. The pubescence on the body beneath is pale fulvous; the four apical joints of the tarsi ferruginous; the claws of the apical joint black; the tibiæ sprinkled outside with black hairs, the posterior pair fringed with black and intermixed with a few fulvous hairs; the wings subhyaline, with their apical margins bordered with fuscous.

This species is very like the B. Smithianus from Shetland, but that species has black pubescence beneath.

Bombus diversus.—Female. Length 10 lines. Clothed above with fulvo-ochraceous, beneath with black pubescence. The head elongate; the face, below the insertion of the antennæ, with thin erect black pubescence; above the insertion it is intermixed with short obscure fulvous, as it is also on the cheeks; the thorax above and on the sides, as well as the three basal segments of the abdomen, clothed with fulvo-ochraceous pubescence. The body beneath, as well as the legs, have a black pubescence; the apical segments of the abdomen are also clothed above with black; the first joint of the posterior tarsi with short ferruginous pubescence; the wings fulvo-hyaline, with their apical margins broadly bordered with fuscous; the nervures fusco-ferruginous.

This species most closely resembles the B. opulentus from N. China, which I described in 'The Journal of Entomology,' vol. i. p. 153; but it is a larger species, and the fulvous pubescence covers an additional segment of the abdomen: the wings of B. opulentus are entirely brown.

Crabro vagatus.—Female. Length 4 lines. Black, the abdomen with yellow maculæ. Head subquadrate, wider than the thorax, longitudinally rugose-striate, the striation curving on the vertex laterally and running down the cheeks; the clypeus covered with bright silvery pile; the scape with a yellow line outside; the ocelli in an angle on the vertex. Thorax closely and coarsely punctured; the metathorax transversely striated and with a central channel, the semicircular space at its base not distinctly defined, but obliquely striated; the wings hyaline and iridescent, the nervures testaceous, the tegulæ black; the tibiæ outside, and the anterior femora beneath towards their apex, yellow; the spines at the apex of the tibiæ yellow. Abdomen subpetiolate; the second segment with an oblong-ovate macula on each side, the fourth and fifth with a widely-interrupted narrow fascia at their basal margins.

This is the only species I have seen of the genus Crabro from Japan: it very closely resembles the European species C. vagus, but the sculpture of the head is very different, as well as that of the metathorax.

FREDERICK SMITH.

A Life-history of Druida parviceps, Newman.—The larva of this species is a birch-miner; there are also two other kinds of Tenthredinideous larvæ, whose economy I am acquainted with, that blotch the leaves of birch. It is solitary in its habits, the perfect insect laying only a single egg on the leaf, always, I believe, depositing it on one side or at tip of the leaf, never in the central parts. The newly-hatched larva commences life by making a small blotch on the upper surface of the birch-leaf; the little spot-like mine is of a brown colour: it would appear as though the larva possessed the power of staining the leaf; certain it is that the region of its birth-place, for the radius of about a quarter of an inch or so, becomes dark brown, as though mimicking the mines of such Microlepidopterous larvæ as Cemiostoma scitella of Zeller and Tischeria dodonæa of Stainton. One first notices these brown spots on the birch-leaves at the latter part of the month of June, and on examining the larva at that period it is found to have a light brown mouth, and a whitish head with light brown markings; the outer margin of its head is also light brown; the body is white, the dorsal vessel dark green; it has twenty-two legs—six pectoral, fourteen ventral and two anal; its 5th and 13th segments are destitute of legs, and it feeds with its belly facing the upper part of its food; its four anterior segments are much larger at this period of its existence than the others. It is a cleanly little animal, and takes considerable pains to keep its mined abode untainted by frass. One is interested in observing that although the larva is slowly consuming the tissues of the leaf, yet at the same time little, if any, frass is perceived within the mine: on turning the mined leaf over, fully expecting to find a hole on its under side for the ejection of frass, no such hole meets the eye; but if the edge of the leaf in the neighbourhood of the blotch be then closely examined with a pocket-lens, one or two little openings are perceived, the little caterpillar having separated the two skins of the leaf for the express purpose of ejecting its frass and cast-off skins, thus pursuing a precisely similar course to that adopted by the sallow-feeding larva of Phyllotoma melanopyga of Klug. In good time the larva moults: it is then observed that there is not anything like so great a disproportion between the sizes of the four anterior segments and the others, so conspicuously noticeable before the ecdysis took place. When the decorative markings have fully developed themselves, the mouth is observed to be dark reddish brown; the head brown, darker at the sides; the back of the 2nd segment has a dark shining brown-coloured plate, with a divisional line running down its centre; the body is white, the dorsal vessel green. On laying the larva on its back, the top of the ventral surface of the 2nd segment is found to be crossed by a narrow pitchy brown-coloured band, and immediately below this is a pale brown X-shaped plate, bounded on either side by a little white wart-like protuberance; the 3rd and 4th segments each possess a small central brown dot; the thoracic legs faintly tinged with pale brown, and encircled with rings of a darker tint; the ventral and anal legs are white; the latter are nearly surrounded by a pale brown band. As the larva increases in size and extends its mine, it makes other little openings along the edge of its mine, in order to eject its frass: the part of the leaf at which it commenced its early life always remains of a much darker colour than any other part of the mine, and is invariably used as a retiring or sleeping-chamber, where it may occasionally be seen lying in a state of repose, just after the same fashion as the larva of Tischeria complanella of Zeller is observed to do, only this larva does not carpet its retiring-chamber with silk like the Microlepidopterous larva of the latter species. When startled or irritated this caterpillar lashes itself about from side to side, assuming for a time a curved posture: as soon as the annoyance is discontinued, or shortly afterwards, it resumes its natural position. Some four moults take place before the larva is sufficiently matured to enter upon its pupal form; at the last of these the body and legs become white; the head is very pale brown, and the jaws darker: it is then about nine lines in length. No discharge of fluid from its lateral pores has been observed. By the 13th of July some of the more advanced larvæ begin the construction of their cocoons, from which they are particularly careful to exclude all foreign substances: I believe these are always constructed inside the mined leaf. The first imagos are developed at the end of August or the beginning of September. Early in this latter month, and also during October, the second brood of larvæ are noticeable mining the leaves of birches, producing a few perfect insects in the months of September and October, the remainder lying over till the next season before they pupize, and the little Tenthredos coming out in the month of June. I have not yet bred any parasites from this species. The larvæ may be collected at Bishop's Wood, Hampstead, on the birches growing alongside the main path through the wood. — *Charles Healy; 74, Napier Street, Hoxton, N., January*, 1869.

A Life-history of Fenusa pumila. — Early in June certain of the leaves of Rubus fruticosus (the common bramble) are observed, on close scrutiny, to have one or more little dark spots on their upper surface: an examination into the cause of such a discoloration results in our discovering a little Tenthredinideous larva feeding in the interior of the leaf, the spotted part of the leaf being full or nearly so of frass: the colour of the larva is white, with a dorsal vessel of a dull green colour; the mouth is dark brown; the head pale yellowish brown, darker at the sides, and with a dark clouded patch on its dorsal surface; the dorsal area of the 2nd segment is dark brown, and the back of each of the 3rd and 4th segments has a narrow, darkish-coloured, interrupted plate; the ventral surface of the 2nd segment is furnished with a brown plate; the plates on the 3rd and 4th segments are of a more irregular shape, and are likewise brown; the 5th segment has a circular plate, whilst the decoration of the 6th segment is confined to a little brown-coloured dot; the six thoracic or true legs are circled with brown rings, and the 5th, 12th and 13th segments are without legs; the twelve ventral legs are white, the two anal legs being nearly surrounded by a brown band; there are twenty legs in all. In due time the larva extends its mine, and in doing so forms a short, narrow, serpentine track, which it leaves nearly filled with frass; it then alters its tactics, and widens its mine into a small blotch: the first moult then takes place, the skin being thrown off entire: the head is glossy white, with a small black spot on each side; its body is white, and the whole of its markings have disappeared; the anterior portion of the dorsal vessel is somewhat orange-coloured, the remainder of the dorsal fluid being a mixture of orange and dark green, the latter colour predominating: the larva lies quiet in its mine until the markings of its body have re-established themselves, a similar state of things taking place at each of the moultings. We may often observe as many as four little blotches in one bramble-leaf, each blotch being tenanted by a Fenusa larva; and the larvæ, in the course of time, having consumed large quantities of the parenchyma of the leaf, are then observed to break into one another's territories, and thus eventually unite their several mines into one large blotch, in which the whole of the little creatures live harmoniously together. On recovering from the effects of its moult the larva recommences feeding; and by and bye a second and third moulting take place: after the third moult the various markings on the head and body assume a much darker tint, the thoracic plates becoming black, and the ventral legs are observed to have the front or inner margin of their bases decorated by a semicircular black band. Arriving at its adult state, the larva throws off its tegument for the fourth time, when its mouth becomes reddish brown; its head pale brown, darker at the sides; and its body dirty white and without any markings, the latter being entirely cast off at the last moult: the full-fed larva is between nine and ten lines in length. After remaining in its mine for a time, the larva makes a fissure in the leaf, and, emerging thence, falls to the ground, and buries itself in the earth to undergo its metamorphosis, never remaining in the leaf to form its cocoon. The perfect insects seem to prefer laying their eggs on plants growing by road-sides and under hedges: I have no recollection of having met with the larva on the leaves of brambles growing in the interior of woods. By the 5th of July the larvæ are abundant and in all stages of growth, and some have already entered upon their pupal state, producing the perfect insects on or about the 26th of the month; they continue coming out during the month of August: at the commencement of that month the larvæ put in an appearance for the second time, gradually increasing in numbers; and these larvæ produce perfect insects all through the month of September: fresh larvæ are constantly being born up to near the end of October; these latter, when full-fed, enter the ground, and remain unchanged during the winter, and from these are developed the perfect insects which appear in the spring of the year (about the 2nd week in May). I have never yet bred any ichneumons from this larva. If this species be ever so infested, the parasites must enter the ground to undergo their pupation, as I have made many long and close searches of the blotched bramble-leaves, endeavouring in vain to discover the cocoon of a parasite.—*Charles Healy.*

Entomological Notes, Captures, &c.

Colias Edusa at Brighton.—I see in this month's 'Entomologist' the Rev. H. J. White, under the head of "Captures at Steyning," states that he only took one Colias Edusa on the Sussex downs, and has not seen above half a dozen. I was staying at Brighton at the end of September and beginning of October, and used frequently to see Edusa flying in the fields by Hove and Cliftonville.—*J. Barnes Johnson; Saxlingham Lodge, Long Stratton, Norfolk, January* 1.

Vanessa Antiopa at Godmanchester.—I beg to report the capture, by Mr. Gerald Hunnyburn, of Godmanchester, of V. Antiopa. It was taken at rest, in September, on a pear tree, early one morning. I saw it shortly after. It was damaged. Margin very white.—*W. Jagger; St. Ives, Hunts, January* 6, 1869.

Callimorpha Hera near Brighton.—A lady living at Patcham, near Brighton, Miss Poore by name, who is an amateur entomologist, caught at a lantern, in the autumn, but was not aware until the other day of its rarity, an example of the above; she does not recollect the day. Thinking it was only a variety of the cream-spot tiger, she offered it to a little boy who is collecting, by whom it was declined, because the edge of the wings looked burnt. A few days since she brought it to Brighton, to ask Mr. Swaysland what it was, and, as may be supposed, is delighted with her prize.—*T. W. Wonfor, Hon. Sec. Brighton & Sussex Nat. Hist. Society.*

The Reed-moth: Correction of an Error.—Would you kindly allow me to correct a few mistakes of Mr. Raymond Fuller King's? Supposing by the reed-moth he means M. Arundinis, I beg to state it was not M. Arundinis, but N. Typhæ, that he discovered in the Castle moat at Framlingham. It was not to Mr. R. W. Ranson, but to myself, that he first showed the pupæ and larvæ. The pupæ and larvæ of N. Typhæ were extremely numerous, there being hardly a stem of the great reed-mace (Typha latifolia) which had not its one, two, or even three inhabitants. I tried to keep some of the larvæ, but they gnawed a hole in my box and got away. I obtained a good many pupæ, but did not manage to breed more than half of them. — *E. F. Bisshopp; 137, Norwich Road, Ipswich, January* 4, 1869.

Dianthœchii Echii, a new British Lepidopteron of the Family Hadenidæ. — I have the pleasure to announce the addition of a very handsome Noctua to the British Fauna, the name of which Mr. Doubleday has kindly given me, and has also shown me foreign specimens of the insect. It is the Dianthœcia irregularis of Hufnagle ('Berlin Magazine,' 1768), or Echii of Borkhausen (1792). I found it at rest about ten miles from Bury St. Edmund's, on its food-plant, the viper's bugloss, early in July this year (1868). Mr. Doubleday has also identified for me an Ægeria, which I took, about ten years ago, between Dover and Folkstone, hovering over a clump of dogwood, as Allantiformis, or rather Andreniformis female. It had been perfectly black from grease for about eight years, and I only lately obtained a clear view of its yellow tail by the application of benzine. Another moth, which I also submitted to Mr. Doubleday, is still a puzzle. Judging from the imago, he would consider it an aberrant vaariety of Hadena Chenopodii, with wings almost as long and sharp as those of a Cucullia, and very distinct markings; but then I dug it under an oak, in a very beautiful long and pointed pale yellow cocoon, very similar to that of Zygæna Filipendulæ, whereas H. Chenopodii does not make such a cocoon. The imago appeared in my breeding-cage in May. The plough is about to pass over a great part of the best hunting-ground for A. sulphuralis at Tuddenham. This will not, however, affect A. rubricata, which was taken in various rye-grass fields. I believe that the district between Higham Station, Brandon, Thetford and Icklingham, will, if properly worked, produce many rarities and perhaps novelties. — (*Rev.*) *A. H. Wratislaw; School Hall, Bury St. Edmund's, December* 30, 1868.

Tabanns sudeticus, a new British Dipteron of the Family Tabanidæ. — This insect was separated from T. bovinus by Zeller in the 'Isis' for 1842, p. 815, and figured pl. i. figs. 5, 8; it is also described as a continental species by Mr. Walker in Part V. of the Museum 'Catalogue of Diptera,' p. 157; by Schiner in the 'Fauna Austriaca,' Part Diptera, vol. i. p. 34; and by other authors. I am indebted to Mr. Verrall for these references. This noble insect equals in size the well-known Tabanus bovinus, but is distinguished at a glance by the testaceous colour of the abdomen. The Entomological Club cabinet possesses a fine series, mostly taken in the South-west of England. All the specimens are females.—*Edward Newman.*

Hæmalopota longicornis, a new British Dipteron of the Family Tabanidæ.—This species was separated by Macquart in his 'Natural History of Diptera,' vol. i. p. 211: it is noticed by Meigen as a variety of H. pluvialis, from which it differs in the antennæ being at least a third longer, and having the basal joint slender and cylindrical, while in H. pluvialis it is obtusely oval; the general distribution of colour in body and wings is nearly the same as in H. pluvialis, but the insect is altogether larger: there are two specimens in the Entomological Club cabinet—one from the neighbourhood of Balcombe, in Sussex; the other from the Kent coast.—*Id.*

Anthrax bifasciata, a new British Dipteron of the Family Anthracidæ.—This species is figured by Meigen, pl. 17, fig. 15, and appears identical with A. maura of Fabricius, Syst. Ant. No. 12. It much resembles A. fenestratus, but the dark portion of the wings is uninterrupted by hyaline spots. In the Entomological Club cabinet.—*Id.*

Anthrax Pandora, a new British Dipteron of the Family Anthracidæ.—This species is figured by Meigen, pl. 17, figs. 4 and 16. Like the preceding, it much resembles Anthrax fenestratus, and I have received both species under that name from the South-west of England: they have stood for some time in the Entomological Club cabinet as Anthrax fenestratus, but, feeling dissatisfied with the name, I took them to Mr. Walker, to whom I am indebted for the names now given.—*Id.*

Anthrax semiatra, a new British Dipteron of the Family Anthracidæ.—Meigen, pl. 17, fig. 14. A very distinct and conspicuous species. A pair of this beautiful insect, pierced with English pins, have been most kindly presented by Mr. Walcott, but I am sorry to add I have no clew whatever to the locality. Full descriptions will appear in the 'Year-Book.'—*Id.*

Camponiscus Healæi, a new British Hymenopteron of the Family Tenthredinidæ.—During the past autumn Mr. Healy, whose researches into the life-history of our leaf-mining Hymenoptera have added so largely to our knowledge of that hitherto little-known family of insects, kindly brought me a number of larvæ he had found feeding on the leaves of Alnus glutinosus (common alder): they were evidently those of a sawfly, the undivided epicranium and isolated ocelli removing all possibility of their being lepidopterous, but their form seemed equally to preclude the possibility of their belonging to either of those sections into which I divided the sawflies in 1832. The shape was perfectly onisciform, the head being usually concealed, but capable of extrusion at the will of the insect; the segments of the body being clearly defined, each segment very thin and almost membranous at the sides, and its extreme margin fringed with hairs: neither legs nor claspers were visible from above, but on turning the creature on its back the usual pair of scaly legs were visible on the 2nd, 3rd and 4th segments; the 5th segment was unprovided with either legs or claspers, and the following segments, the 6th to the 12th, both inclusive, each possessed a pair of semitransparent claspers, very short, and more resembling adhesive disks than the familiar claspers of sawfly larvæ: I could not detect any claspers on the small caudal segment. Mr. May, the able translator of Vollenhoven's admirable papers on sawflies, kindly undertook the transmission of some of these curious creatures to M. Vollenhoven, and through his medium I have learned that the larvæ were already known to De Geer (vol. ii. sect. 2, plate 38, figs. 11, 12 and 13), to Reaumur (vol. v., Memoir 3, pl. 12, figs. 17 and 18), and were also mentioned by Gustav Dahlbom in his 'Clavis Novi Hymenopterorum Systematis,' but that no one had any knowledge of the imago. Under these circumstances it was therefore with peculiar pleasure I found that Mr. Healy had been successful in breeding the perfect insect, and I have now larva, pupa and imago before me, and have great pleasure in naming the species after the indefatigable discoverer of its life-history. The antennæ are nine-jointed, clothed with a very short down, and taper gradually to the tip; the wing-cells are one marginal and four submarginal; three of these are equal in length; the fourth is square: the head and antennæ are black; the thorax is black, with a triangular yellow spot in front of the base of the fore wing, and a diffuse testaceous spot on the sternum beneath the wing; the abdomen is black above and on the sides beneath, but testaceous in the middle beneath; the legs, including the coxæ and tarsi, are ochraceous. Mr. Healy possesses interesting particulars concerning the life-history of this insect, which I trust he will shortly make known to the readers of the 'Entomologist.'—*E. Newman.*

Allanthus viduus, a new British Hymenopteron of the Family Tenthredinidæ. — I had the good fortune to take a single specimen of this insect, many years ago, in Darenth Wood, in Kent, and it has remained unnamed until the present month, when Mr. Smith, of the British Museum, kindly supplied names for the present and the following species. There is no cognate species with which to compare Allantus viduus: the fore wings are opaque smoky brown; the head, thorax and abdomen intensely black, with the exception of the 4th segment, which is white above: it is about the size of A. zonatus.—*Id.*

Allantus Schæfferi, a new British Hymenopteron of the Family Tenthredinidæ. — I took a single specimen of this insect, also many years since, in Herefordshire, and, like the previous one, it has remained unnamed. A. Zona and A. Zonula are cognate British species: it resembles both of these in size and the yellow base of the antennæ; the fore wings have a clouded costal margin, more especially towards the tip; the abdomen is black, with two yellow belts; the first is very narrow and near the base, the second broader and beyond the middle; the tip is also yellow: it agrees with Zona and Zonula in size.—*Id.*

Platystoma Umbrarum, a new British Dipteron of the Family Muscidæ.—A single specimen of this insect, which is the Musca Umbrarum of Fabricius' 'Species Insectorum,' ii. 450, 80, and the Platystoma Umbrarum of Meigen's 'Diptera,' v. 391, pl. 53, fig. 22, has been taken in Gloucestershire: it is a much larger and more showy insect than the common P. Seminationis, which in other respects it a good deal resembles. The specimen is now in the cabinet of the Entomological Club.—*Id.*

Coccus Beckii, a new British Hemipteron of the Family Coccidæ.—My readers will recollect a most able and valuable paper, published in the 'Zoologist' (second series), by the late lamented Mr. Richard Beck, on the Coccus of the orange· Mr. Beck did not name the species, and I therefore propose to call it Coccus Beckii, after its distinguished historian. I have now the pleasure of recording a new feature in its history; it has either migrated to the apple, or is a parasite of the orange and apple in common. During the investigation which took place on the discovery of that beautiful little fly, Ceratitis citriperda, in the pear, my friend Mr. Sterry called my attention to this second infester of the orange having established itself on a different fruit. It appeared as a narrow scale about a tenth of an inch in length, slightly bent at one extremity, and always adhering so closely to the rind of the apple that it is scarcely possible to remove it entire. The females are larger than the males, and never by any chance leave the spot where they first fasten themselves: the male is winged, but has never yet been taken in that state.—*Edward Newman.*

Sibinia Statices, a new Coleopteron of the Family Curculionidæ.—In the summer of 1866 I captured a number of specimens of a Sibinia from the sea-thrift. These have been sent to several coleopterists, but up to the present time I have been unable to learn its name (if it has any), further than that it is a species new to Britain. Under these circumstances, and after waiting for about eighteen months, I shall not perhaps be considered impatient if I now introduce it under the manuscript name of Sibinia Statices. Habitat of larva and imago in the flower-heads of the sea-thrift, Island of Portsea. It is a pretty species, light brown in colour, with darker dorsal stripes, and when quite fresh is covered with dense scales, but these latter are soon rubbed off; then the insect has somewhat the colour and appearance of Amalis Scortitium. It is about the size of Miccotrogus picirostris, and very local. I have searched the island round, and as yet have only found it in one spot a few yards in diameter, where it is pretty abundant. Under the circumstances I do not think it advisable to be more explicit as to its locality, as dealers would soon exterminate the species.—*Henry Moncreaff; Southsea.*

Orchestes Alni in a Branch of Whitethorn.—In October last I broke off the portion of a decaying branch of whitethorn which was much perforated and eaten by some wood-feeding insect, and, having taken it home, I proceeded to cut it into fragments, expecting to find a colony of Anobium castaneum; instead of that species, to my surprise, I disinterred about three dozen specimens of Orchestes Alni. They were closely surrounded by frass, and had evidently pupized, if not fed up, in the stump. Was it not a curious habitat for this insect, as the larvæ are stated to be leaf-feeders by most writers?—*Henry Moncreaff.*

Vanessa Cardui at Christmas.—This morning I captured a beautiful and perfect specimen of Vanessa Cardui. Is it not a rather unusual occurrence for the season of the year?—*Geo. Bell; Gun Wharf, Portsmouth, January* 24, 1868.

[I think not: hybernating butterflies come abroad whenever the thermometer approaches 60° Fahr., which it did just before Christmas-day.—*E. Newman.*]

Pontia Rapæ in January.—Mr. Wardle, gardener to Alfred Illingworth, Esq., M.P., has kindly sent me a specimen of P. Rapæ which he captured in the conservatory on the 17th of January, and informs me that another white butterfly was seen a few days previously. Artificial heat has, I presume, more to do with this premature birth than the mildness of the season, but I thought the occurrence interesting.—*Edwin Birchall; Newlay, Leeds, January* 24.

New Fluid for Preserving Larvæ, &c.—A cheap fluid for the satisfactory preservation of larvæ and other soft animal forms has long been a desideratum among naturalists. The following solutions, prepared by Prof. Verrill, and published by him in 'Silliman's Journal,' have been found satisfactory for the preservation of both the colour and form, as well as the structure of larvæ, fishes, mollusks, and leaves of plants:—Solution A 1 (which may be kept in wooden casks): Rock salt, 40 oz.; nitre (nitrate of potassa), 4 oz.; soft water, 1 gallon. This is the final solution in which all invertebrate animals must be preserved. A solution with double the amount of water may be kept, and called A 2; another, with three gallons of water, will be A 3. Solution B 1: Soft water, 1 gallon; solution A 1, 1 quart; arseniate of potassa, 1 oz. Another solution, with double the amount of water, may be made, and called solution B 2. To preserve insects with these solutions, they are placed first in solution B 1, but if the weather be cool it would be better to first employ B 2.

If the specimens rise to the surface they should be kept under by mechanical means. After remaining for several hours, or a day (varying according to the size and the weather), in the B 1 solution, they may be transferred to A 3, and then successively to A 2 and A 1; and when thus fully preserved they may be transferred to a fresh portion of the last solution, which has been filtered clean and bright, and put up in a cabinet, when no further change will be necessary, if the bottle or other vessel be properly secured to prevent the escape of the fluid by crystallization around the opening. To prevent this the stopper, whether of cork or glass, together with the neck of the bottle, may be covered with a solution of paraffine, or wax in turpentine, or benzole, which should be applied only when the surfaces are quite dry and clean. The length of time that any specimen should remain in each of the solutions is usually indicated by their sinking to the bottom when saturated with it. In many cases but two solutions below A 1 will be effectual.

Captures of Lepidoptera.—The following is a list of a few of the lepidopterous insects I have noticed, taken or bred during the past season.

Cynthia Cardui. Greetland Moors, in June.

Macroglossa Stellatarum. A specimen brought to me from Almondbury.

Chelonia Plantaginis. Of this species I reared a second brood in September.

Arctia fuliginosa. Greetland Moors.

Liparis Salicis. I noticed the young larvæ of this species in large numbers on willow, when at Southport, in May.

Orgyia fascelina. Larvæ in abundance on dwarf sallow on the sand-hills at Southport, beginning of May.

Bombyx Quercus. Larvæ feeding on dwarf sallow at Southport.

B. Callunæ. Larvæ abundant on the Greetland Moors.

Epione advenaria. Bred: larvæ received from Southsea.

Eurymene dolobraria. A greenish larva, obtained by beating in Sherwood Forest the previous autumn, produced this species.

Crocallis elinguaria. Bred a fair number from larvæ which emerged from the eggs in spring, and had spent the winter in the egg state.

Boarmia perfumaria. Very abundant in gardens. I feel convinced that ivy is not the only food of this insect.

Ephyra punctaria and E. pendularia. Bred a beautiful series of each, from larvæ obtained by beating in Sherwood Forest the previous autumn.

Scodiona belgiaria. Common on the Greetland Moors. I obtained a good number of eggs.

Hybernia aurantiaria. Clare Hill.

Eupithecia pulchellata. Larvæ on foxglove at Woodsome.

E. fraxinata. Larvæ rather freely by beating ash at Grimescar.

E. nanata. Larvæ in abundance by sweeping the heather at Crosland Moor.

E. subnotata and E. vulgata. In the imago state, the latter very commonly.

E. exiguata. This insect was produced from a larva obtained by beating in Sherwood Forest, the previous autumn.

Melanthia ocellata. At Linthwaite, not uncommon.

Melanippe galiata. Common at Grimescar.

Coremia ferrugata. At Southport, in May.

Cidaria russata. Bred.

C. populata. In a fir-wood at Norland this species occurred in profusion; it was also common at Linthwaite.

Pelurga comitata. Clare Hill.

Acronycta Psi. In September a specimen, which had only been a few weeks in the pupa, appeared in one of my breeding-boxes.

A. Rumicis. In the larva state. This insect was formerly very abundant, even on the road-sides; now it is comparatively seldom seen.

Polia flavocincta. The larvæ of this species were not uncommon on everlasting peas in a garden at Clare Hill.

Aplecta nebulosa. A larva beaten from birch in Sherwood Forest, the previous autumn, produced this insect.

Anarta Myrtilli. Very common on the Greetland Moors, flying in the daytime. I swept the larvæ in numbers from heather in autumn.

Mania maura. Clare Hill. — *G. T. Porritt; Clare Hill, Huddersfield, December* 3, 1868.

Proceedings of the Entomological Society of London.

November 16, 1868.—H. W. Bates, Esq., President, in the chair.

Mr. Bond exhibited a specimen of Tapinostola Elymi, captured on the Norfolk coast, near Yarmouth; a variety of Dianthœcia capsincola, bred in 1867 by Mr. Noah Greening, at Warrington, having the wings on one side abnormally coloured; seven specimens of Polia nigrocincta, bred in 1868 by Mr. Greening, from larvæ found in the Isle of Man, and the earthen case in which one of the pupæ had been enclosed.

Prof. Westwood announced that the Leucania exhibited by Mr. Briggs at the previous Meeting had proved to be L. albipuncta, *W. V.*, a species new to the British list.

Mr. M'Lachlan read extracts from the 'Canadian Entomologist,' one recording the occurrence of Papilio Machaon in the Hudson's Bay Territory, the other relating to the naturalization in North America of Pieris Rapæ, which, recently introduced into Canada, had already spread southwards into Maine and Vermont.

Mr. Bond mentioned the occurrence of a swarm of beetles in Cambridgeshire. A correspondent, writing from Whittlesford on the 30th of September, 1868, said:—"Within the last few days, the road, the foot-path, the grass and the hedges from my house for about three-quarters of a mile, have been covered with them: there must be bushels of them, and although we have had showers, their numbers do not diminish." The species in question was Gastrophysa Polygoni.

Mr. M'Lachlan exhibited larva-cases, and specimens of both sexes of the imago (winged males and wingless females) of Enœcyla pusilla, bred by Mr. Fletcher, of Worcester, an interesting addition to the list of British Trichoptera. The larvæ were terrestrial in their habits, feeding in mosses growing on the bark of trees, and had not any external respiratory organs.

December 7, 1868.—H. W. Bates, Esq., President, in the chair.

The Secretary announced the death of Prof. Boheman, an Honorary Member of the Society: he died at Stockholm on the 2nd of November, at the age of seventy-two years.

The Secretary announced that an exhibition of bees would be held at Milan, from the 10th to the 13th of the month, and would comprise a collection of all kinds of bees, honey, and instruments and utensils employed in apiculture, for which various prizes would be distributed. A silver medal was also offered for the best mode of taking the honey without destroying the bees.

Mr. Bond exhibited two specimens of Limenitis Sibylla, negroes, entirely black on the upper side; and three specimens of Polyommatus Adonis, one of which, a male, was remarkable for its extremely small size, another bore on the under side of the fore wings a number of broad bars of black, whilst the third, a female, was partly coloured like the male, the upper surface of the wings being dashed with bright blue, not shading off into brown, but clearly and sharply defined.

Mr. Dutton exhibited a Catocala Fraxini, captured in an empty house at Eastbourne in August last.

January 4, 1869. — H. W. Bates, Esq., President, in the chair.

Mr. Bond exhibited two diminutive specimens of Vanessa Urticæ, about half the usual size of the butterfly; they were two out of fifty or more dwarfs, not all of the same brood of larvæ, which, owing probably to the extreme heat of 1868, had been developed with remarkable rapidity, having remained less than a week in the chrysalis state.

Mr. Bond also exhibited a dark variety of the female Apatura Iris, and a very pale variety of Hesperia Comma.

Mr. W. C. Boyd exhibited a specimen of Crambus myellus, captured by Mr. Adam Boyd some time since near Blair Athol, and which had remained mixed in Mr. Boyd's collection with C. pinetellus, until his attention was called to it by the announcement at the previous Meeting.

The Secretary exhibited photographs of nests of Vespa Britannica and V. arborea, presented to the Society by Mr. John Hogg, by whom the nests were found at Norton, Durham.

Mr. Smith exhibited a series of drawings of bees and wasps and their respective nests, and a number of the actual nests, collected in India by Mr. Charles Horne.

Mr. Horne (who was present as a visitor) gave some interesting details on the habits of the insects. The species of bee which was kept by the natives was, he believed, the Apis dorsata. In the North-west Provinces it was necessary to leave the key in every lock, or the cavity was pretty sure to be occupied by a Pelopæus: if a sheet of paper was left on a mantel-shelf, it would be fixed thereto by an inserted mud-cell; or a like cell might often be found interposed between a pillow and the bed; even a little hollow in the floor, in spite of the inevitable destruction of the nest, would be filled; and in one case he had known a nest to be placed on the edge of a door, and it was seven times crushed by the shutting of the door, and seven times renewed before the little bee could be induced to forsake the spot she had chosen. Some of the nests exhibited were placed in very singular positions; one, of a leaf-cutting bee, was in the handle or ear of a terra cotta vase, access being obtained through a small hole in the narrow lower end of the handle; another, belonging to a Pelopæus, and consisting of a single mud-cell, was attached to a man's signet or finger-ring the stone of which had fallen out, and was fastened to the metal by means of a coil or knot of mud passed through the hole where the stone had been; a third nest of a bee consisted of a spherical mass of cells which was found in the centre (filling up the whole hollow) of the nest of a mouse, which was suspended in grass.

Prof. Westwood mentioned that at Oxford he had found a mouse's nest in the centre of one of his bee-hives, surrounded by a number of headless bees.

Correction of an Error.— At page 177, under Phyllotoma microcephala, *Klug.*, eight lines from the top, for "the 4th and the 12th or penultimate segments are apodal," read "the 5th and penultimate segments are apodal."

Death of Mr. Cooper.—Mr. Abraham Cooper, Royal Academician, died at Greenwich, on the 24th December, 1868, in the 82nd year of his age. He was born in September, 1787, in Red Lion Street, Holborn, and his parents at a later period kept a public-house at Holloway. Young Cooper was early in life occupied very much amongst horses, and it is said that his earliest effort at depicting one of these quadrupeds was on a stable-door. His great talent in this direction was noticed by the late Sir Henry Meux, who at once became and long continued his most liberal patron. His first exhibited picture was "Tam-o-Shanter," which appeared on the walls of the British Institution in 1814. Six years later he was elected an R.A., and from that time to the present the walls of the Royal Academy have been annually adorned with his paintings. There is no instance of a painter working his way to fame and comparative affluence by more unwearied industry or more genuine talent. It was my good fortune to form his acquaintance as an entomologist very many years ago, and it is in that character alone that this Journal has to notice him. About forty years ago Mr. Cooper was an ardent collector of Coleoptera, as shown by the repeated mention of his name in Stephens' 'Illustrations of British Entomology.' He was the discoverer of a Dendrophilus named after him, also of Stilicus fragilis, and many other species, more particularly of those inhabiting bark. He was one of those liberal entomologists who subscribed to send the late Benjamin Standish to the New Forest, Mr. Lupton and Mr. Raddon also being partners in the adventure. Among other rarities captured on this occasion were a number of specimens of the rare Staph, Emus hirtus, a pair of which fell to Mr. Cooper's share, and were duly deposited in his collection. Up to this period his cabinet was open to all who desired to consult it, whether the owner was present or absent. Some ardent entomologist, unhappily afflicted with the disease called kleptomania, availed himself of the opportunity thus afforded him, and abstracted one of the specimens of Emus. The theft was never forgiven: the cabinet was closed, and Mr. Cooper gave up Entomology, only to resume it very feebly after a lapse of forty years; but he woke to a new *régime;* the carding of Coleoptera was new to him, and he never fell into the improved method. The collection formed by Mr. Cooper is likely to come under the hammer at Stevens' Sale-rooms, but the specimens, generally very old ones and always pinned, are not likely, I fear, to realize much money. — *Edward Newman.*

Coleoptera of the Mediterranean. — Mr. G. R. Crotch is studying the Coleoptera found on the shores of the Mediterranean, and will be much obliged to any entomologist who has the opportunity, if he would collect, and send home in spirits, any Coleoptera he may meet with.

Captures near Frant, Tunbridge, and Pembury, during May, June, and part of July last. — L. Sinapis, one. A. Paphia, several. A. Adippe, common: this species I believe is not generally on the wing till July, but, like many others, it was out very early last season, and quite *passé* the middle of June. V. Polychloros, saw one only. H. Hyperanthus, very abundant; one variety, with minute specks on the under side instead of wings. T. Rubi, common. T. Quercus, a few. L. Ægon, also out early, middle of June; swarming by thousands the third week in June: one of our specimens measures only nine lines, the spots on the under side being very faint: it reminds one somewhat of an Alsus. L. Argiolus, a few. S. Alveolus, abundant. T. Tages, a few. Z. Trifolii, common; one variety. L. Mesomella, several. L. Aureola, one. E. Russula, abundant, but always worn. P. Cytisaria, common E. Omicronaria, common. E. Heparata, common, but always worn. A. Subsericeata, common. C. Temerata, one. M. Notata, one. F. Piniaria, very abundant. P. Petraria, common. L. Didymata, abundant. E. Albulata, one. E. Nanata, two; also many other Eupitheciæ at present unnamed. M. Unangulata, one. A. Rubidata, one. A. Plagiata, abundant. E. Palumbaria, swarming in great numbers; one variety with the wings dark sooty brown. D. Hamula, several. D. Unguicula, one. A. Porphyrea, A. Myrtilli; both these common on heath. H. Arbuti, a few. T. Pastinum, one. E. Glyphica, a few. P. Ænea, common. P. Punicealis, a few. P. Purpuralis, common. E. Octomaculalis, two. B. Pandalis, one. S. Cinctalis, several. C. Pinetellus, several. C. Warringtonellus, common. P. Betulella, one. P. Palumbella, common. P. Acanthodactylus, one. A. Brockeella, several; besides many unnamed, and common and abundant everywhere. — *H. R. and J. E. Cox; West Dulwich, S.E.*

Duplicates, Desiderata, &c.

Duplicates for Exchange. — L. Helveola, C. Dominula, S. Carpini (male), E. Advenaria, N. Hispidaria, A. Rusticata, C. Boreata, M. Euphorbiata, S. Dubitata, S. Rhamnata, S. Undulata, C. Silaceata, B. Hyalinalis, H. Crassalis, M. Cribrum, P. Ornatella, P. Formosa, A. Sauciana, A. Ulmana, A. Strobilella, R. Turionella, M. Schulziana, S. Euphorbiana.— *Chas. Holyday; 4, Huntsworth Terrace, Portman Market, London.*

Exchange. — Wanted to purchase, or in exchange (two specimens of each preferred) :—Stylops (any species); Glossina morsitans (tetse); Morpho Adonis; Hepialus virescens (New Zealand); Lytta vesicatoria (British); Anobium pulsator, Sitophilus granarius, Balaninus nucum, Scolytus destructor, Locusta viridissima (all British); Elater (larva of wire-worm); Apis mellifica (male); Chrysis fulgida; a small series of the larger and more beautiful forms of the British Micro-Lepidoptera, forty to fifty species, in fine condition.— *(Rev.) Henry H. Higgins; Free Public Museum, Liverpool.*

Duplicates.—Rhamni, Edusa, Hyale, Cardamines, Sinapis, Cardui, Paphia, Adonis, Tiliæ, Populi, Convolvuli, Vinula. *Desiderata.* — Sibylla, Davus, Cassiope, Blandina, Polychloall the Hair-streaks, &c. If no answer in three days, offer declined.—*E. H. Wolland; 19, Oakley Street, Chelsea.*

Duplicates.—C. Xerampelina (one), A. Aprilina, C. Dominula. *Desiderata.*— D. Coryli, E. Versicolor, B. Castrensis, H. Actæon.—*H. McDowall; Kettering.*

Duplicates.— I have a few of the following, in good condition,—Davus, Irrorella, Fuliginosa, Salicis, Carpini, Strigillaria, Ulmata, Flavicornis, Chi, Fagella, &c., also a few pupæ of Carpini and Menyanthidis, in exchange for eggs, pupæ or imagos. Offers will be replied to within a week if accepted.—*R. Kay; 2, Spring Street, Bury, Lancashire.*

Duplicates for Exchange.— Hyale, Pruni, Paniscus, Blandina, Davus, Porcellus, Pinastri, Silago, Myrtilli, Solidaginis, Flavicornis, Crassalis, Margaritalis, P. Cristana, Hastiana, Quercana, Undulata.— *W. Downing; High Street, Hoddesdon, Herts.*

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By EDWARD NEWMAN.

1. In this work the whole of Colonel Montagu's 'Dictionary,' 'Supplement' and 'Appendix' are reprinted in a combined and alphabetical order, the words SUPPLEMENT and APPENDIX being prefixed to whatever is derived from these two sources. Nothing that Montagu has published is omitted or altered.

2. Observation and discovery are incessantly at work: it is no more possible for our knowledge to remain stationary than for this earth to discontinue its rotation; hence the additions which Colonel Montagu found it necessary to make between 1802, the date of the 'Dictionary,' and 1813, the date of the Supplement: these additions, now incorporated, exceed the original work in bulk. In 1833 Mr. Selby published his 'Illustrations of British Ornithology,' and in this work twenty-four species unknown to Colonel Montagu were described. In 1843 Mr. Yarrell published the first edition of his 'History of British Birds;' in 1846 a second edition, and in 1856 a third and final edition: in these three editions that amiable and most painstaking author added, from various sources, no less than fifty-nine species. The 'Zoologist' has added twenty-one species to those mentioned by Montagu, Selby and Yarrell: and here it is but fair to those gentlemen who have made their discoveries known through the medium of that Journal, to state that many of Yarrell's species were first published in the 'Zoologist,' and thence transferred to the 'History;' but the credit of such additions is given to the latter work, on account of its systematic character. The descriptions of these added species are extracted from the works of Temminck, Selby, and Yarrell, are marked by inverted commas, and are accompanied by a reference to the volume, page and figure.

3. Immediately after the name is inserted a reference to a figure of the *bird* and to a figure of the *egg:* these references are added both to the original and the new descriptions. For this purpose Yarrell's 'History of British Birds' and Hewitson's 'Oology' have been selected: these works are at present, and for the next half-century will certainly continue, our standard authorities. All these interpolations are always enclosed in editorial brackets.

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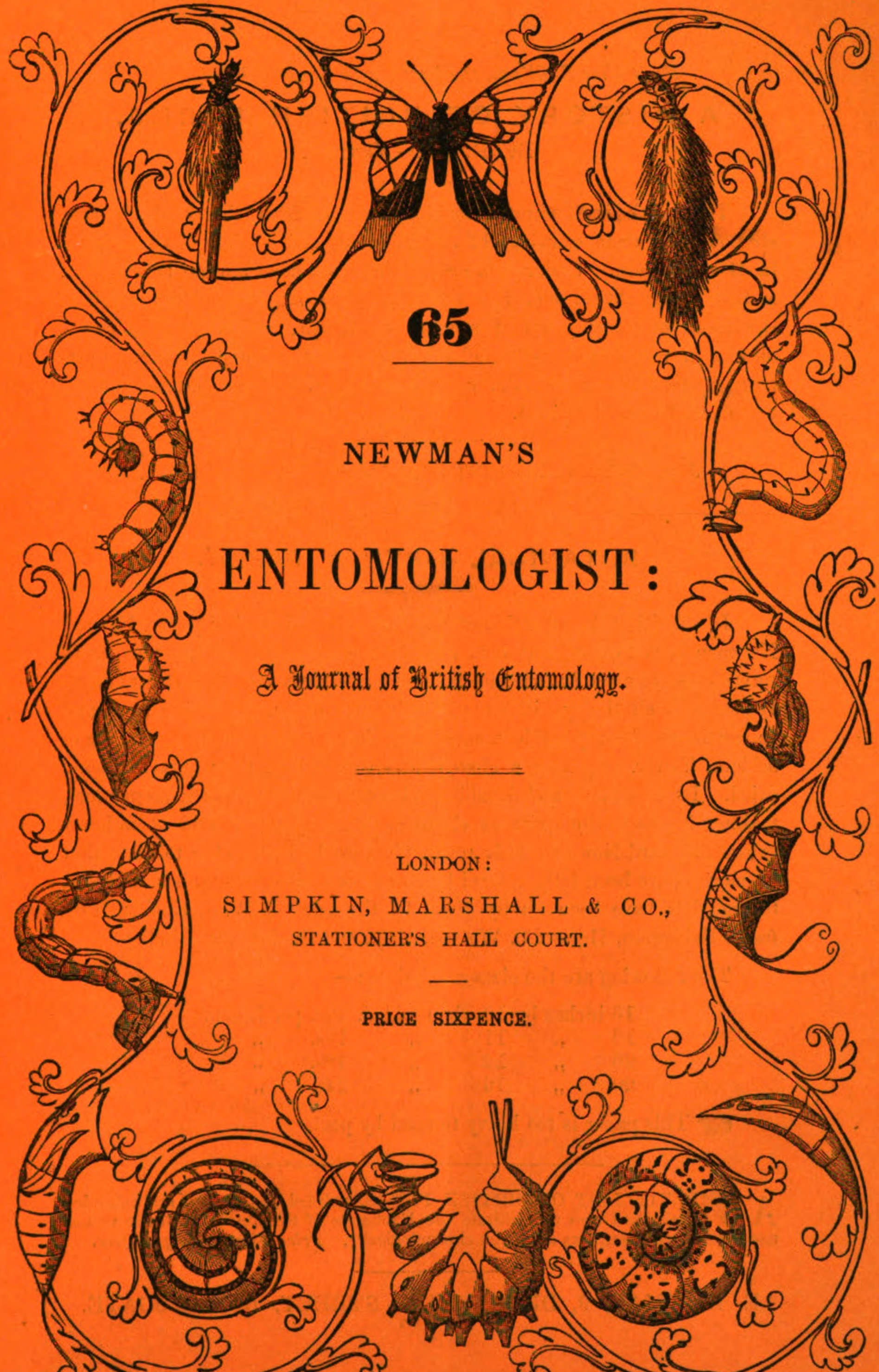

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Life-history of Argynnis Euphrosyne. — The females may be observed, during the months of May and June, busily employed in examining the leaves of the dog-violet, for the purpose of selecting one exactly adapted to their taste for the deposition of their eggs. The egg has been observed by many entomologists; but I have never had the good fortune to possess one, and therefore adopt the description lately published by Mr. Buckler in the 'Entomologist's Monthly Magazine,' a journal of great usefulness and value, more particularly in the present day of multiplied observations, when it would be utterly impossible to compress them all, especially those relating to technical and exotic Entomology, within the narrow compass of the 'Entomologist:' indeed, the "press of matter" and the accumulation of "important papers long in arrear," so pathetically bewailed by the Editors of the 'Magazine,' suggests the propriety of the establishment of a third Journal, an arrangement that would admit of an earlier publication of "important papers," as well as a better classification of them than can exist under present circumstances. To return to Euphrosyne. Mr. Buckler, in describing the egg, says it is "of a blunt conical shape, with its lower surface, which adheres to the leaf, flattened; its sides are ribbed: at first it is of a dull greenish yellow colour, becoming afterwards brownish. Towards the end of June the larva is hatched, then being of a pale greenish tint; after its first moult it becomes browner green, and about the middle of July attaches itself to the stem of the plant, and ceases to feed." Mr. Buckler failed in keeping the larva through the winter, but delayed the hybernation of one individual until the end of July by keeping it in a hot sunny window: "it was then half an inch long, black and spiny, with a faint indication of a dull whitish stripe along the sides above the feet." At this stage the larva was killed by mould, dorsal and spiracular lines ditto. Spiracles yellowish in a dusky ring. Head dusky. Segmental divisions orange. Whole body tinged (when full-fed) with orange, and sparsely strewed with short darkish hairs. Full-fed in August.—(*Rev.*) *H. Harpur Crewe; The Rectory, Drayton-Beauchamp, Tring, July* 22, 1869.

Pupation of Botys verticalis.— About the middle of June, on opening one of the many rolled-up leaves of the common nettle (Urtica dioica), the full-fed larva of Botys verticalis is perceived lying snugly ensconced therein. Should the observer be desirous of watching its pupal changes, he will find that, just before the caterpillar is ready to enter the pupal state, the form and colour of the anal segment is clearly visible through the skin; and that as it slowly passes into a chrysalis its head, thorax and wing-sheaths are of a beautiful apple-green colour; the abdominal segments are pale green mottled with white; the dorsal pale green, and visible throughout its entire length; the anal segment of the pupa is of a dull pink colour, and armed at its extremity with a cluster of hooked bristles. After the expiration of an hour or so, the observer will further notice that some of the mottled markings on the abdomen begin to change to a cream-colour: he is then interested in observing that the head and thorax are gradually turning whitish, whilst on the other hand the segmental divisions of the abdomen are green; the creamy coloration situate on certain parts of the abdomen is observed slowly to assume a pale pinkish or flesh tint, particularly noticeable on the 1st, 2nd, 3rd, 4th, 5th, 6th and 7th of those segments, changing gradually into a pale brown tone. After an interval of about a couple of hours, the head and thorax become pale brown: it is then seen that the base of the ventral surface of the 4th, 5th, 6th and 7th abdominal segments have become partly surrounded by a semicircular band composed of dark pigment, and are faintly seen through the posterior portion of the transparent green-coloured wing-cases. On turning the pupa on to its breast, we then observe that the dorsal surface of the above-mentioned segments are not possessed of a semicircular band, but of a dark brown-coloured central mark or blotch: these latter, however, after a time, throw out fresh pigment, and spread themselves right and left until they come in contact with the ventral bands, and, in so doing, entirely encircle the base of each of the segments 4 to 7, both inclusive, with a dark pigmentary band: by this time the dorsal vessel becomes much more indistinct, on the head and thorax slowly deepening in tint; the wing-sheaths enter upon their coloration, the back parts turning darkish from the shoulder downwards, and in a short time assume a dark brownish tone, the remaining parts of the wings deepening into a dull green tint; the abdominal segments are then perceived to be of a dark tint. In the course of half an hour the eyes, head and thorax have turned dark shining brown, the entire surface of the wing-sheaths assuming a similar colour; the abdominal segments, in order to keep pace with the general economy of the pupa, deepen still further in colour, and then all outward trace of the dorsal vessel is lost, the pupa finally settling down to a very dark shining brown, in many instances approaching almost a black, others becoming quite black. — *Charles Healy; 74, Napier Street, Hoxton, N.*

Life-history of Fenusa Ulmi, Newman.—During the month of May the leaves of the common elm (Ulmus campestris) are mined by the caterpillars of three distinct orders of insects, *viz.*, Lepidoptera, Coleoptera and Hymenoptera. The Lepidoptera are represented early in the month by the numerous larvæ of a small Microlepidopterous insect (Coleophora fuscedinella), whose peculiar mode of feeding soon causes a number of little blotches to appear on the leaves. Later in the month (about the 10th) the larva of a little Coleopteron (Orchestis Alni) begins feeding: the new-comer at first makes a narrow mine, afterwards expanding it into a blotch; the latter is situate at the tip or sides of the leaves. At the end or nearly so of the month, the larvæ of the minute Tenthredo whose life-history is under consideration are observed to be feeding inside the leaves, making a little white-brown-coloured blotch. The egg is laid on the under side of the leaf and close to the spot where the small rib branches off from the mid-rib; the parent fly, however, occasionally deposits an egg or two at random on the leaves of Ulmus campestris, and at times we may meet with a leaf of this tree containing no fewer than five little larvæ of Fenusa Ulmi, the little mines starting out on both sides of the mid-rib: the same circumstance is also observable at times in the leaves of its other food, the wych elm (Ulmus montana). There is only one brood of this caterpillar during the season, and by the end of June they are all under ground and safe within their egg-shaped cocoons; the cocoons themselves are fabricated out of dark brown silk; the cocoon-tenants remain entombed for something like ten and a half months before the perfect insects liberate themselves: the larva whilst feeding lies on its back, displaying to our view the decorative markings on its ventral surface; it has a white body, and is in possession of twenty-two legs, the first six of which are annulated with dark brown; the claws are also dark brown; the head of the little creature is tinged with pale brown of a darker tone at the sides, mouth reddish brown, eye-spots brown, and its dorsal vessel is dull green; the under side of the 2nd segment has a dark oblong-shaped plate down its centre, and on either side of this there are two brownish dots; on running our eyes down the remaining segments we observe that, excepting the anal segment, all are furnished with a small black-coloured dot; the 5th segment has no organs of progression. At the first moult the decorative markings of the larva are all thrown off, and if at that time we closely inspect the under surface of the body we perceive a slight remnant of pigmentary deposit on the segments, situate at the exact spots where the black ventral dots were located previous to the moult: these dusky marks, however, soon fade away, and leave the segments entirely spotless; the head and eyes slowly resume their original colour, and the six thoracic legs regain their annulations: when full-fed it ceases to feed, and lies in its mine in a state of repose, and throws off its skin for the last time; by and bye a faint yellowish tinge spreads itself over the body of the larva. At the appointed time the larva liberates itself from its mine by biting a hole in it. At the last moult the brown-coloured bands on its six anterior organs of locomotion are thrown off entirely. Escaping from its mined abode, the little creature drops to the ground, and now, every time it is touched, it instantly partially curls its body up, remaining in that position only for a moment or two, in fact following a similar course to that pursued by another little Tenthredo larva that inhabits the leaves of the oak, a species of larva, by the way, respecting whose economy I have collected some interesting details, but whose imago has, as yet, baffled all my attempts to rear. The adult larva of Fenusa Ulmi never pupises inside the mined leaf, but buries itself in the ground, the imago appearing about the middle of May. The parasite of F. Ulmi spins up inside the mined leaf. For the last seven or eight years I have noticed the larva of this Tenthredo very abundant in the leaves of Ulmus campestris growing at Stratford, Essex; it is also common in the leaves of the same tree in the Addington Road, Croydon, and it is a constant yearly visitor to Ulmus montana growing at Shirley, in Surrey. I have also met with it in the leaves of Ulmus campestris in the lane leading to Dartford Heath, and it appears to be generally distributed.—*Charles Healy.*

Life-history of Fenusa pygmæa, Hartig. — All through the summer and autumn months any one examining the leaves of the common agrimony (Agrimonia Eupatoria), particularly those growing nearest to the ground, will in all probability perceive that some of them contain a brown blotch. This discoloration of the leaf is caused by the larva of Fenusa pygmæa having devoured all the parenchyma which was formerly situated within the radius of the blotched area: the mine has a dull dotted look, especially so the smaller mined leaves, caused by the circumstance of the creature's leaving its frass and cast-off skins within the mine. On examining the leaves of this plant about the middle of the month of May, some of them attract our attention from the simple fact of their containing one, two, or even three little galleries in them; and at the broadest end of each of the little galleries a minute caterpillar is perceived lying on its back. At that time of the year we shall probably notice that the contained larva is lying perfectly still, preparatory to undergoing its first moult; its three anterior segments are seen to be glossy white, and its green-coloured dorsal vessel shows through the white body. This little Tenthredo larva has three pairs of thoracic, seven pairs of abdominal, and two anal legs; there is an entire absence of legs on both the 5th and 13th segments. Shortly after its ecdysis is completed the little creature recommences feeding, and we then observe that it departs from its previous mode of feeding in a narrow mine, and commences blotching the leaf. Its head is pale brown, darker at the sides; its body white; the dorsal vessel green:

as soon as its markings are fully developed, the under side of the 2nd segment becomes possessed of a brown-coloured shield, and the ventral surface of the 3rd, 4th and 5th segments is adorned with a little black dot. By the time that it has fully satisfied its appetite, and has arrived at its adult state, the last ecdysis takes place; its body then becomes whitish yellow; its head is faintly tinted with brown, and its mouth is tipped with dark brown; the centre and anal parts of the dorsal vessel only are visible, and of a dark tone. There is a little Tenthredo larva that inhabits the leaves of the buttercup, which also changes to a pale yellow colour when full-fed; it then emits a most pleasant lemon-scent from its body. The full-fed larva of Fenusa pygmæa is tolerably active, walking along at a sharp pace: it buries itself in the ground to pass its pupation. The perfect insects are first developed about the end of the month. In June there is another brood of larvæ, which lasts through the months of July and August, from which some imagos are developed in the autumn, the greater number remaining quietly in the ground until the following April before they put in an appearance. The parasite of F. pygmæa constructs its cocoon within the blotched leaf.—*Charles Healy.*

Entomological Notes, Captures, &c.

Scarcity of White Butterflies.— During the whole of the present spring and summer, up to this 12th of July, I have seen but three specimens of the small white butterfly (Pieris Rapæ), and not one of the large species (P. Brassicæ). This is the more remarkable, as they were so abundant last year as to be a positive nuisance, from the destruction of our cabbages caused by their caterpillars. I should much like to learn from my readers whether a similar observation has been made elsewhere in the neighbourhood of London, or in any part of the country.—*Edward Newman.*

Early Appearance of Colias Edusa.— Many specimens of C. Edusa have been captured here during the last month, and some of them the finest I ever saw. I noticed one early in the month of June, but did not note the day. I have seen at least half a dozen on the wing and eight or nine captured ones. The caterpillars of the peacock butterfly are remarkably abundant this year; hundreds of them may be seen together. I have obtained a specimen of S. ocellatus this season, being my first specimen in this locality.—*Stephen Clogg; Looe, July* 2, 1869.

Colias Edusa near Wingham, Kent.—Driving with an entomological friend near here to-day, we saw a good specimen of this butterfly on the wing over a clover-field.—*William Thomson; Adelaide Road, Penge, June* 25, 1869.

Lycæna Arion, &c., in Devon: Melitæa Cinxia in Dorset, &c.—When I last had the pleasure of seeing you, I think you told me that you were not aware that the Bold Head, on the coast of Devon, was a locality for the large blue butterfly (Lycæna Arion). Two years since, when with some friends, we caught several dozen of that species, and about a fortnight since many were again taken in that locality by friends of mine. When at Lyme Regis, in Dorset, and adjoining the coast of Devon, I saw several collections of Lepidoptera in which were specimens of Melitæa Cinxia, said to have been taken in the neighbourhood. Now, as that seems to be a locality not mentioned in entomological works for that insect, I will, if you wish, get further information concerning it. The chalk-hill blue, Corydon, is also taken at Lyme, and I should say also on the coast of Devon, which is close adjoining. At Ivybridge, near Plymouth, I took V. Polychloros at the end of June last,—a species very uncommon in Devon. The marbled white I have found along the coast from Lyme, in Dorset, to Sidmouth on the coast of Devon. I need scarcely say that I shall be most happy to give you any information concerning the butterflies of Devon that lies in my power. Thecla Betulæ is rather rare in this neighbourhood, but I have beaten many larvæ from the sloebushes near Plymouth. The variety Bryoniæ of P. Napi was taken by a friend of mine near Plymouth some years since. —*J. Gatcombe;* 8, *Lower Durnford Street, Plymouth, Devon, July* 14, 1869.

Eggs of Polyommatus Arion.—One of the many "problems" which Mr. Stainton was formerly in the habit of pressing upon us seems likely to meet with a solution shortly, namely, the life-history of our largest blue, P. Arion. The old locality for this rare species was Barnwell Wold, Northamptonshire;

but I have not heard of any captures in that locality for many years. About ten years ago I found the species very sparingly distributed on parts of the Cotswold Hills, a few miles from Gloucester and Cheltenham, and captures have been since then occasionally recorded; subsequently it has been taken at about fifteen miles distance. Some years ago I received several specimens which were taken about six miles from Kingsbridge, Devon; and there is no doubt the species would be met with, if looked for at the right season, in several other localities; but these localities are generally of the most uninviting description—bleak, elevated ground, broken up by deserted quarries, thinly clothed with vegetation, among which the wild thyme is the most conspicuous. Thse are the places, "far from the haunts of men," where P. Arion loves to gambol, and with its fragrant food-plant to "waste its sweetness in the desert air," with now and then an escort in the shape of P. Alexis, Alsus, or Agestis. Last summer the locality I had previously worked yielded the insect in more abundance than usual; and although I tried to obtain eggs from captured pairs, I did not succeed. This year I, as well as some others, have been more fortunate. Curiously enough, although some two or three dozen were taken here last summer, the species has turned up this year much more abundant than ever. This flush of specimens has enabled us to be more prodigal in imprisoning likely-looking females, with a view to their oviposition. Mr. Marsden sent some, with the native thyme, to Mr. Buckler; and in a few days we received the welcome intelligence that a few eggs had been laid on the blossoms. I am glad to say that I also have succeeded in obtaining a fair number of eggs, and Mr. Marsden has also got some. They are laid on the corolla, generally at the base, often on faded flowers. Is this any indication that the larvæ feed on the seeds? They are of a beautiful bird's-egg-green colour. When they hatch, whether they hybernate, and other details of their history, will now probably be duly forthcoming, if we are fortunate enough to rear the species, which seems to have been as much overlooked by continental as by English entomologists. The recent publication of the fact that Professor Zeller saw a female Arion deposit her eggs on the blossoms of the wild thyme, gave us the key as to what attraction to offer to the females we might find in "an interesting condition;" and we may now hope to succeed in unravelling the mystery which obscures the early life of this peculiar species. — *Joseph Merrin; Gloucester, June* 25, 1869.

Stauropus Fagi in Richmond Park.—It may interest some of your readers to hear that I yesterday evening took a fine female specimen of Stauropus Fagi, while at rest on the palings in Richmond Park. I am surprised to find this rarity so near London. I intend keeping the moth for three or four days, in hope of obtaining eggs.—*J. A. Edwards; 4, Chandos Street, West Strand, W.C., July* 7, 1869.

Noctuas on Stinging Nettles.—The Rev. J. Greene, in his 'Insect Hunter's Companion,' observes that on certain nights, and in favourable localities, the green leaves of stinging nettles are found to be peopled with moths; he adds that he could not imagine what attraction possibly exists for them. During the last few weeks I have searched the nettles in our neighbourhood with a lantern on every mild evening, and can fully corroborate his statement as to the presence of the moths, but I believe I have also been fortunate enough to discover the attraction. Nettles, as well as other plants, are subject to the attack of Aphides; indeed it is very difficult to find a nettle-leaf whose under side is not covered with them. It is well known that Aphides excrete a sweet limpid liquid, which sometimes accumulates in sufficient quantity to drop on to the leaves below, producing a glazed appearance and a coating of a sticky substance known as "honey-dew." It is to imbibe this liquid, of which ants are so fond, that the moths assemble. This I believe to be a rational explanation of the fact, since I found moths on the sticky leaves only, and indeed could see them shifting their trunks from one part of the leaf to another as they sucked up the "dew." Where the liquid had been formed in sufficient quantity to collect into a drop at the end of the leaf, there would be two or three insects busily sipping the nectar. I may add that I have seen moths on other Aphis-infested plants, red and black currant-bushes, &c. We thus see that, ages before we had concocted our "rum and sugar" wherewith to paint the tree-trunks, Nature had spread her feast for the Noctuas. Hitherto I have not taken any rarities in such situations.—*R. Meldola; Park Place, Leyton.*

Dianthœcia Echii at Tuddenham.—I have been at my old haunts at Tuddenham, and spent four days at the 'Anchor' there, entomologizing. I have got Dianthœcia Echii again—a large female, taken on June 28th: it was beaten out of a bank alongside a path of rye.—(*Rev*). *A.H. Wratislaw; School Hall, Bury St. Edmund's, June* 20.

Scent of Nematus Saliceti.—My valued correspondent Mr. Müller mentions a character in the full-fed larva of this sawfly. He writes thus:—"I handled sundry specimens of this larva before they were full-fed, and noticed no particular odour; but when I happened to take up with my finger a full-fed larva which I had watched tumbling down, I immediately dropped it in disgust, as a most unpleasant odour, similar to that of Acanthia lectularia [the bed-bug] struck my olfactory nerves." No sooner have the larvæ spun themselves cocoons than the offensive odour is lost. On this Mr. Müller thus philosophizes:—"I am tempted to conclude that this odour is given to them as a safeguard during that short but most critical moment of their lives, when neither the shell of the gall nor mother earth can protect them against their enemies." Here we have the "grain of wheat" in the observation recorded, and no one will quarrel with the accompaniment of a little "chaff." (See Ent. Mo. Mag., July, 1869).—*E. Newman.*

Fireflies in Kent.—The enclosed specimens of Lampyris italica, or firefly, which, we are commonly assured, is only to be seen in the South of Europe, was caught in my garden last night about 9 o'clock. A young barbarian, home for the holidays, dealt a fatal stroke at its brilliant life before I had time to plead for mercy; but its soft yellow light, so familiar to those who dwell in warmer latitudes, and so different from the cold blue gleam emitted by an English glowworm, still lingered in the last segment of its abdomen, when, three hours later, I retired to rest.—*Ashford, Kent.*—'*Times*' *Newspaper, July* 16.

Fireflies in Surrey.—The enclosed specimen is one of many that have every evening for the past week, attracted by the lights, flown into my dining-room. Having been in the tropics, I recognized my beautiful visitors, which had been so numerous that they were denounced as nuisances.—*Caterham, July* 17.—*Id.*

[What do these paragraphs mean? The truly English-boy propensity of killing gives a *vraisemblance* to the first story (for every English boy, until humanized by Entomology, kills or hurts whatever he can); but what is the firefly of the tropics found at Caterham? Can any of my correspondents throw light on this? even the glimmer of a glow-worm would be acceptable.—*E. Newman.*]

Varieties of Zygæna Filipendulæ and Luperina testacea.—I have bred an orange variety of Z. Filipendulæ, and another having one under wing orange and the other red: are these unusual? I also took at sugar a black variety of L. testacea in beautiful condition. — *W. Jagger; St. Ives, Hunts, July* 20, 1869.

Hadena assimilis in Inverness-shire. — On the 30th of June last I took a specimen of the above moth, on the 10th instant another, and on the 11th instant a third, all at sugar, in Inverness-shire.—*Nicholas Cooke; Spring View, Liscard, July* 16, 1869.

Oxyptilus Britanniodactylus, a new Plume.—At a meeting of the Northern Entomological Society, held on the 22nd of May, Mr. Gregson exhibited carefully-executed drawings of the larva and imago of many species of Pterophorina, made by himself from living specimens, including drawings, in all its stages, of a new plume, discovered by him in the larval state in Wales, hybernating on Teucrium Scorodonia, in March, when he was searching for hybernating larvæ of P. osteodactylus, where the golden rod grows amongst the wood sage; and he read the following description of the new species of plume, under the name of Oxyptilus Britanniodactylus *alar*: — Expanse six to seven lines; antennæ annulated with brown and gray; head and thorax rich fuscous-brown; abdomen bronze-brown, with raised light scales on each segment; anterior wings rather broad, fuscous-brown, divided into five equal parts by four oblique markings—the first part formed by a dark mark on the first third of the costa, and a light mark on the inner margin; the next by a light mark on the middle having a cuneiform dark dash inside, and a dark dot or blotch on the inner-margin cilia having a light edge; the third by a light silvery oblique striga across the wing, terminating in front of the second dot on the inner cilia; and the last by a silvery streak on the first plume, well pronounced along the costa towards the apex, having an ochrey inside, and appearing obliquely across the second plume; on this plume there is a bright silvery hook-like mark at the lower angle; posterior wings—two upper plumes dull fuscous-brown; the third plume lighter silvery, terminating with a dark blotch, and the extreme point light with a dark dot. The eggs are hatched in autumn, and the larvæ eat small round holes in the upper leaves of Teucrium Scorodonia growing in sheltered places. They appear in winter as small oval tufts of whitish hair, attached to the under side of the leaves. Early in spring they move, and eat into the young shoots of the food-plant, and in a few days afterwards, if the season is fine, they may be seen on the upper side of the young leaves casting their skins, and then they appear like oblong pinkish bundles of hair. They now begin to eat freely, previous to the next change, and may be easily found, often two or three, sometimes more, upon each spike of their food-plant, always on the upper side of the terminal leaves. In a few days they move down the stem, and eat a small round hole into the stem, about two joints down, which soon causes the tips of the plant to droop, and near this cover they remain for some weeks, eating the young growing leaves around them, until they appear as stout whitish green hairy larvæ, with a retractile head, attenuate to the anus, four to five lines long; and change in May and June to a pinkish and green, eventually brown pupa, hanging by the tail upon anything near, appearing as imago in June and July. The species flies freely in sheltered places, when the sun shines, from 4 p.m. to 7 p.m., on mild evenings. That this species has remained in our collections as P. Hieracii so long, is perhaps only in consequence of our want of good specimens to work with; but that it differs from O. Hieracii of continental authors Mr. Gregson was quite satisfied. It was taken freely at Pettypool Wood, many years ago, by N. Cooke and others; since then he had met with it in Wales, in Ireland, in the Isle of Man, and in company with Mr. Hodgkinson in Westmoreland, and at Humphrey Head, in North Lancashire. He had therefore called it Oxyptilus Britanniodactylus.—*Kindly communicated by Mr. C. S. Gregson.*

To Correspondents.

Tortrix or Halias quercana. — The moth I have sent for your inspection I took on the 11th of June. I cannot find it figured in your 'History of British Moths.' I have a second one which was reared from a caterpillar: it fed upon ivy-leaves, turned to a chrysalis about the middle of October, and the moth came out on the 15th of May: there is little or no tinge of red on the margin of the fore wings; its body and under wings are pearly white. — *W. Adcock*; *Bereleigh House, Petersfield, Hants.*

[The moth sent is Halias quercana, a female; the other moth you describe is a male of the same. The reason why not described in my 'British Moths' is because they belong to what are called Microlepidoptera, and the work in question only treats of Macrolepidoptera.—*E. Newman.*]

Echinomyia grossa bred from Bombyx Callunæ. — I have this week had the enclosed fly come out of a pupa of Bombyx Callunæ. I have seen others rather like it before, but had no thoughts of their breeding in a caterpillar. I should be obliged for its name.—*W. Lister ; Glaisdale, June* 24.

[The large black fly is Echinomyia grossa.—*E. Newman.*]

James Gerrard. — Your beetle is the well-known bacon weevil (Dermestes lardarius): it is too common. The black staphylinus you describe as having pectinated antennæ must be Velleius dilatatus. The late Mr. Turner also obtained it in the New Forest.—*E. Newman.*

J. Walmsley.—The moth is the leopard (Zeuzera Æsculi), and Mr. W. R. Tate's caterpillar, found in the stem of a sapling mountain ash (Pyrus aucuparia), is that of the same species. A complete life-history of this destructive insect will be found in No. 7 of the 'Entomologist.'—*Id.*

Qui murmurat. — The life-history of the goat-moth shall appear in the 'Entomologist' when a *hiatus* occurs. I thought it more suited to the pages of the 'Field.'—*Id.*

Anne E. E. wishes to know the scientific name of the stag-beetle, and what it is worth; also where it is found, and if it is common. The scientific name is Lucanus Cervus: I am quite unable to say what a specimen is worth: it is common round London, particularly about Blackheath and at Croydon.—*Id.*

T. N. Hoey. — The names of the moths are as under:— 1, Eupithecia subnotata; 3, E. castigata; 8, E. pumilata; 2, Hadena plebeia; 11, H. Genistæ; 4 and 6, Thera obeliscata; 5, Melanippe subtristata; 7, Emmelesia albulata; 9, Ennychia octomaculalis; 10, Herminia tarsicrinalis.—*E. N.*

Duplicates, Desiderata, &c.

Duplicates for Exchange. — Full-fed larvæ of A. Fuliginosa, for other larvæ or pupæ; also roots of Trientalis Europæa or Gentiana verna, for British Lepidoptera. Answer by return of post, if accepted.—*Alfred Pickard; Wolsingham, Darlington.*

Duplicates.—I have a few fresh-set specimens of S. Bembeciformis to exchange for any of the following imagos:— A. Cratægi, L. Ægeria, G. Rhamni, V. Polychloros, A. Iris, S. Tiliæ, S. Ligustri, C. Elpenor, C. Porcellus, or larvæ of S. Tiliæ, S. Ligustri or V. Io. — *W. M. Hamilton;* 13, *Union Street, Newcastle-on-Tyne.*

Duplicates. — I have larvæ of S. Illustraria for exchange; also imagos of the same (bred), spring and summer broods.— *G. Elisha;* 2, *Cross Street, Ashley Crescent, City Road.*

Duplicates.—I have some long series of P. Adonis which I should be glad to exchange for Dominula, Sybilla, Machaon, Cassiope, &c.—*W. Hards;* 1, *Cobden Road, Elm Grove, Brighton.*

Duplicates. — I have the following Coleoptera to give away to any of your readers who will send a box and return postage:—Sibinia Statices, Mecinus circulatus, Trachyphlœus scaber, T. scabriculus, Phyllotreta nodicornis, Aphthona Euphorbiæ.—*Henry Moncreaff; Southsea.*

Duplicates.—L. Nivearia and A. Sulphuralis. *Desiderata.* —C. Sparsata, E. Consignata, B. Roboraria, T. Extersaria, A. Sylvata, A. Blomeraria, S. Sacraria, and C. Sagittata.— (*Rev.*) *A. H. Wratislaw; Bury St. Edmund's.*

Duplicates. — P. Machaon, C. Reclusa, O. Pudibunda, S. Tiliæ, S. Ligustri, S. Ocellatus, S. Carpini, C. Dominula, A. Fuliginosa, A. Villica, A. Aprilina, S. Belgiaria, E. Lanestris, A. Prodromaria. *Desiderata.* — Noctuæ or Geometræ. — *H. McDowall;* 8, *St. George's Square, Sunderland.*

Exchange. — I have a quantity of Globulariæ, Adonis, Alsus, &c., I would be happy to exchange. My wants are too numerous to mention. — *F. Trangmar;* 112, *London Road, Brighton.*

Duplicates for Exchange. — Pupæ of Z. Filipendulæ and A. grossulariata, and larvæ of L. dispar, V. Urticæ and S. Carpini.—*Mark Kershaw;* 62, *Hillgate Street, Hurst Brook, Ashton-under-Lyne.*

Change of Residence. — Mr. J. Chappell has removed from 8, Richmond Street, to Boundary Lane House, Greenheys, Manchester.

Change of Address. — The Rev. Joseph Greene, from 13, Mall, Clifton, near Bristol, to Eveline Villa, Apsley Road, Clifton, near Bristol.

Change of Address.—Wm. Laycock, from 12, Bath Street, to Randall Street, Highfield, Sheffield.

Newman's 'Butterflies of England.' — Having undertaken to write a Natural History of our British Butterflies, to be published uniformly with the 'British Moths,' I write to say how much obliged I shall be for the donation or loan of specimens, especially if varieties. So many years have elapsed since the issue of my former work, called the "Butterfly Number of Young England," that a second and enlarged history seems to be required. The sale of that little *broçhure* warrants the preparation of a very large edition, and no pains will be spared to make it complete.—*E. N.*

Insects for Sale or Exchange. — Hyale, Artemis, Pruni, Betulæ, T. W-Album, H. Velleda, L. Helveola, C. Porcellus, A. Fuliginosa, A. Urticæ, D. Coryli, T. Cratægi, E. Advenaria, E. Fuscantaria, black Betularia, A. Rusticata, L. Multistrigaria, A. Pictaria, A. Ulmata, M. Tristata, C. Imbutata, L. Nivearia, A. Sulphuralis, E. Venustula, N. Angustellus, A. Funerella, N. Schiffermüllerella, and many others. Pupæ of T. Betulæ, B. Castrensis and Multistrigaria. Insects and pupæ bought or exchanged. — *W. Downing; Hoddesdon, Herts.*

Exchange Club.—In reply to several inquiries in reference to this Club, I have been desired to state that every information may be obtained of Mr. J. Merrin, Journal Office, Gloucester; or Mr. H. Marsden, Brook Street, Gloucester.

Insect-Hunter's Companion.—It is intended to reprint this useful little work, after Mr. Greene's return from Ireland: the announcement of date and price will be given in the 'Entomologist' as soon as decided upon.

Sawflies.—I again repeat my earnest request for specimens of British sawflies, of which I am endeavouring to make out a first list: although English entomologists, with very few exceptions,—I do not know half a dozen,—entirely ignore these insects, unless as a nuisance, our brothers on the Continent and in the United States are working at them with great assiduity.—*E. Newman.*

R. L. DAVIS (Waltham Cross, Herts), Preserver of Larvæ to the British Museum. Larvæ preserved at 5s. per dozen. Sample box, containing twelve species, sent free for 6s. A list of species sent on receipt of stamp.

THOMAS EEDLE, being engaged collecting Insects in Scotland, has sent home pupæ of Arctia fuliginosa for sale at 3s. per dozen. Store-boxes, Post-boxes, and Setting-boards also for sale.—9, Maidstone Place, Goldsmith Row, Hackney Road.

W. DOWNING, of Hoddesdon, Herts, has on sale some splendid black Betularia, and some fine Capsophila, Solidaginis; also larvæ of Villica, Dominula, and many other insects. Insects and pupæ bought.

INSECTS, BOOKS AND CABINETS.

Mr. J. C. STEVENS begs to announce that he will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on Monday, May 3rd, at half-past 12 precisely, the COLLECTION OF BRITISH INSECTS, of all Orders, formed by the late Abraham Cooper, Esq., R.A., together with his Entomological Books; also the CABINETS OF EXOTIC LEPIDOPTERA formed by the late General Sir John Hearsey. On view the morning of Sale, and Catalogues to be had.

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Contributions to a Synopsis of British Coleoptera.

By G. R. CROTCH, Esq.

THE following paper is an extract from a Monograph of Balaninus and Anthonomus in the 'Annales de la Société Entomologique de France,' 1868, by M. Desbrochers de Loges. My series was submitted to him at the time, and hence may be considered to represent his views with correctness.

BALANINUS.

Group 1.—Large species, clothed with paler scales; antennæ with the joints slender, elongate; club acuminate.

A. Posterior femora with a strong tooth.

1. B. Glandium, *Marsh* (venosus, *Germ.*) Black, densely clothed with ferruginous scales, the elytra with darker spots; legs thick and strong; elytra separately rounded at the apex; scutellum narrow: length 3—4½ lines. Common on oaks, &c.

2. B. tesselatus, *Fourc.* (turbatus, *Gyll.*) Black, densely clothed with ferruginous scales; rostrum very elongate in the female and much curved; antennæ pubescent, with the joints of the funiculus elongate: length 3—3½ lines. Rare.

3. B. Nucum, *L.* Very like the preceding, but with the rostrum less curved and the antennæ very pilose, the latter joints of the funiculus being subnodose: length 3—5 lines. Common everywhere.

(To this group belongs the hitherto unidentified B. pellitus, *Schh.*, very like B. Glandium, but the femora have a subtriangular tooth, not unciform as in the latter, and the rostrum is hardly incrassate at the base.)

B. Posterior femora with a minute tooth.

4. B. villosus, *Fab.* Black, beneath cinereous; elytra with a posterior fascia, and the scutellum cinereous: length 2½—4 lines. Common.

5. B. Cerasorum, *Herbst.* Ferruginous, beneath paler; elytra variegated with paler spots: length 2—3 lines. This species reproduces the coloration of B. Nucum.

c. Femora with no tooth.

6. B. rubidus, *Gyll.* Not unlike the preceding, but more uniform in colour, and with the thorax and under surface more or less black; the rostrum nearly alike in both sexes, &c.: length 2—2½ lines. Commoner than the preceding, with which it is often confounded.

Group II.—Small black species, with the pygidium nearly covered.

7. B. Crux, *Fab.*—Black; elytra with a white cross: length 1 line. One specimen in Leach's collection, with a label in his own writing.

8. B. Brassicæ, *Fab.* Black; scutellum and body beneath white; elytra with a fine gray pubescence; antennæ brown: length 1½—2 lines. Common.

9. B. pyrrhoceras, *Marsh.* Exactly like the preceding, but the rostrum is nearly alike in both sexes, and the antennæ are entirely pale, except the club: length 1—1¾ line. Less common than the preceding.

ANTHONOMUS.

Group I.—Elytra with paler fasciæ and markings.

A. Anterior femora with a large triangular tooth.

1. A. Ulmi, *DeG.* Ferruginous; rostrum elongate, subopaque; elytra punctate-striate, with the punctures subquadrate, and with a posterior transverse whitish fascia: length 2—2½ lines.

2. A. Chevrolatii, *Desb.* Like the preceding in coloration, but at once distinguished by its very convex thorax and the smooth interstices of the elytra: length 1½—2 lines. Rare: taken formerly by Mr. E. W. Janson near London.

3. A. rufus, *Schh.* Again very like A. Ulmi in coloration, but to be recognized by the shining very cylindric rostrum; the interstices of the elytra are smooth and shining: length 1½—2 lines. Recorded as British by M. Desbrochers de Loges.

(A fourth species, A. Pyri, *Schh.*, is much darker than the preceding, with a very long rostrum, and the elytra are bituberculate at the base.)

4. A. Pomorum, *L.* Piceous, elongate-ovate; elytra with an oblique whitish fascia; scutellum whitish; rostrum elongate, curved: length 1½—2½ lines.

(A. incurvus, *Panz.*, is also given as English by M. Desbrochers de Loges, but probably erroneously. It is very like A. Pomorum, but is shorter, more convex, less parallel, and the legs are much less stout and paler in colour.)

B. Anterior femora with a moderately visible tooth.

5. A. pedicularius, *L.* Varying from ferruginous to piceous, with a short thick very opaque rostrum; elytra with two transverse white bands, variable in extent and colour, but generally well defined: length 1½—2½ lines. Common.

6. A. conspersus, *Desb.* Extremely close to the preceding, but constantly smaller, darker and narrower; the elytra are more uniformly clothed with pubescence which does not form bands, and the whole structure is more slender: length 1½ line. Taken by Dr. Sharp in Dumfriesshire, on Sorbus.

(A. distinguendus, *Desb.*, from the North of France, is extremely close to both the above, but is shorter and slightly ventricose; the elytra are bifasciate, and the femora less dentate than in A. pedicularius.)

C. Anterior femora with a very small spiniform tooth.

(The only species of this group, A. Sorbi, has not yet occurred in England: it is nearly black, with the elytra ferruginous, with two pale fasciæ.)

Group II.—Elytra unicolorous.

7. A. varians, *Payk.* (pubescens, *Wat. Cat.*). Entirely red, except the head and rostrum, which is shining: length 2 lines. Rannoch and other parts of Scotland, on pines. This is the only form found here as yet: it varies in Sweden to the point of becoming quite black.

8. A. britannus, *Desb.* (pubescens, *Walt.*) Entirely red, concolorous; rostrum opaque, short; anterior femora very minutely dentate: length 1½ line. Described from three specimens taken by Mr. Smith, one of which, through the great liberality of that gentleman, is now in my collection.

(The true A. pubescens, *Payk.*, is larger, has a very elongate slightly shining rostrum; the whole form is more elongate, the legs are thicker, and the posterior tibiæ are not arcuate in the male.)

9. A. Rubi, *Herbst*. Black, sparingly clothed with a gray pubescence; rostrum elongate, opaque; femora with a very minute tooth: length 1—2 lines. Extremely variable in size, and generally distributed. A permanently small form of this species occurs in various parts of the kingdom, especially in Scotland, but always in marshy boggy places, with Comarum palustre, and in localities where the type-form never occurs. I fail to see any difference between them, except in the size and the colour of the elytra, which is generally rufo-piceous, but it may be distinguished as var.? Comari.

G. R. Crotch.

Description of the Larva of Lobophora hexapterata.—The head is prone, of very nearly the same width as the 2nd segment; it is slightly notched on the crown, and the cheeks are slightly swollen; the body is almost uniformly cylindrical and rather obese, the divisions of the segments distinctly marked, and each segment, in addition, is transversely wrinkled; the 13th terminates in two acutely conical approximate points directed backwards. The colour of the head is pale apple-green, with black ocelli and pitchy mandibles; the body is pale apple-green, with an indistinctly defined and rather slender medio-dorsal stripe of a rather darker hue; this stripe is due to the presence of food in the alimentary canal; and on each side of it is a paler stripe, equally indistinct, and approaching to glaucous-white in colour: the legs are concolorous with the body, and tipped with three or four strong brown spines, and the claspers are of the same colour, and tipped with a series of shorter spines of the same brown colour as those of the legs: the ventral and dorsal surfaces are almost concolorous: it feeds on Populus tremula (aspen), and is full-fed at the end of July. I am indebted to Mr. Porritt, of Huddersfield, for a supply of these larvæ, sent me purposely for description.—*Edward Newman.*

Entomological Notes, Captures, &c.

A Visit to the Isle of Man.—I have again had the pleasure of visiting the Isle of Man in company with Mr. Hutchinson, of Leominster. The following Lepidoptera were taken; I omit species of universal occurrence:—Sesia Philanthiformis (the perfect insect frequents the flowers of Calluna vulgaris; the flowers of Statice Armeria—the food-plant of the larva—appear to have no attractions for the moth: they emerge from the pupa between 8 and 9 a.m.), Setina Irrorella, Lithosia complana, Orgyia fascelina, Gnophos obscurata, Pseudopterpna cytisaria, Acidalia promutata, Abraxas Ulmata, Eupithecia pulchellata, E. venosata, E. fraxinata, E. constrictata, E. exiguata, E. satyrata, E. castigata, E. subnotata, E. pumilata, E. vulgata, Ypsipetes impluviata, Melanthia albicillata, Apamea unanimis, Mamestra anceps, Triphæna subsequa (one specimen), Hecatera serena, Dianthœcia cæsia, D. capsophila, Abrostola Urticæ, A. triplasia, Plusia pulchrina, Phytometra ænea, Phycis subornatella, Chilo mucronellus, Melia sociella, Crambus falsellus, C. inquinatellus. Cymatophora Or, Agrotis lucernea, Aporophyla australis, Epione apiciaria, have also occurred this year, but we did not meet with them. As only a very small part of the island has been explored by collectors, and none of it thoroughly, it would be premature to offer a list of species occurring there, but grounds already exist for believing the Lepidoptera of the Isle of Man are by no means so few in number as has been supposed: its central position possibly to some extent compensates for its limited area, and, considering its climate—milder and more equable I believe than any other part of the British Islands (the mean winter temperature is said to be 5° higher than at Naples),—I think a number of what are usually considered southern species will probably be found to occur, of which Philanthiformis, Nigro-cincta and Australis (all three until lately only known as British from specimens captured on the Devonshire coast) may be looked upon as the vanguard. Coming from Yorkshire, in the same parallel of latitude, six hours seem to transplant the traveller into a different region of the globe; shrubs such as the myrtle, the Fuchsia, the Magnolia and the Arbutus, which in the North of England rarely survive a winter in the open air, here fear no frost and become great trees. I have seen a plant of the lemon-scented Verbena, hardly known in Yorkshire out of the conservatory, twenty feet in height, with a stem as thick as a man's leg, and Hypericum Androsæmum ten feet high and the stem three inches in diameter. Hypericum calycinum (the rose of Sharon) also grows luxuriantly in sheltered spots on the cliffs, and it is worth the cost of a visit to the island to see this glorious flower at home. Among ferns Asplenium marinum is abundant: I also noticed Osmunda regalis and Adiantum Capillus-Veneris sparingly, and in the early summer the sandy slopes are gay with the lovely blue flowers of the somewhat local Scilla verna.—*Edwin Birchall, jun.; Newlay, August* 12, 1869.

Dianthœcia carpophaga and D. capsophila.—All will agree in admiring the skill and patience with which Mr. Crewe has sought to solve the question of the identity or otherwise of the above-named insects (Entom. iv. 295); but I venture to think his experiment, however interesting, does not justify the conclusion he seeks to educe from it. All that can fairly be said to be proved is that the difference between Carpophaga and Capsophila, whatever its nature or extent, is too great or too deeply seated to be eradicated in one generation by the change of conditions to which the insect has been subjected; and I think it might naturally be expected that the tendency to inherit parental characteristics would overpower the effects of a mere change of food from Silene maritima to S. inflata. In considering the matter it should also be remembered that both Scotch and Irish Lepidoptera, from some unknown cause, are very generally darker in colour than their English congeners: the difference in colour between an English and a Scotch Aplecta occulta is as great as between Capsophila and some of the darker types of Carpophaga; but I know by experience that the eggs of a Scotch Occulta produce imagos as dark as the parent, although the larvæ may have fed on English dandelions. It seems to me that the much-vexed questions, What is a species? and is a permanent variety an incipient species? are really involved in the point under discussion. If Mr. Crewe's experiment is to be held conclusive, what are we to say of the so-called varieties of the human race? It would seem to follow that if the child of negro parents, born in

England and reared on the ordinary food of English children, should at maturity, in spite of the change of food and climate, still present the characteristics of the black race, we must conclude that the negro and the white man are distinct species and not merely varieties. Now, adhering as I do to the old-fashioned belief that God "hath made of one blood all nations of men for to dwell on all the face of the earth," and considering the undeniable facts of human variation, I know not how a belief in the unity of our race is to be reasonably maintained without the admission that species are almost infinitely variable; and there is an end of all science in the matter if we permit ourselves to consider as indicating "varieties" only, in the human race, differences of colour and structure both large and persistently transmitted, and when the same or even a much less amount of variation occurs amongst the lower animals to claim for it specific rank. White men may not have sprung from black, or *vice versâ*; Carpophaga may not have produced Capsophila: there is no probability that these varieties or species are, under any circumstances, convertible the one into the other; more likely in both cases the existing forms have sprung from some more ancient type of a less specialized character. —*Edwin Birchall; August* 4, 1869.

Scarcity of White Butterflies in Derbyshire. — I have read your note anent the scarcity of butterflies. I can confirm it as regards this place. They never abound here, but this year they have almost disappeared. Until this week I do not think I have seen twenty of all kinds. In the spring two or three hybernated Atalanta and Rhamni, a few whites, and still fewer tortoise-shells and orange-tips appeared; then for some weeks there was literally not one to be seen; this week they have reappeared, but not abundantly. Last year I picked up, without any trouble, about sixty larvæ of A. Cardamines in the garden, upon the pods of the single rocket; this year I only saw four of the butterflies at large, and of course the larvæ are absent.—(*Rev.*) *Hugh A. Stowell; Breadsall Rectory, Derby.*

Scarcity of White Butterflies in the New Forest.—Seeing a notice by Mr. Newman respecting the scarcity of our common whites this season near London, I thought it might possibly interest some readers to know that I have found them equally rare in the New Forest: till last week scarcely a dozen specimens of Napi or Brassicæ have I seen here, and Rapæ has been still scarcer; lately, however, the latter has put in a better appearance. I have also noticed that the specimens of Napi and Rapæ are much below the average size: I captured the specimens for inspection, and found a similar feature in A. Cardamines, which was also very scarce and remarkably small. On the whole I find it a decidedly bad season for Lepidoptera, also for insects in general. A. Paphia seems the commonest insect out now, and it certainly sits by dozens on all the brambles round here.—*H. Ramsay Cox; Lyndhurst, August* 3, 1869.

Scarcity of White Butterflies at Newport, Mon.—I see that P. Rapæ and P. Brassicæ have been very scarce in London this spring and summer. I only saw two Rapæ up to the 10th of July, and either one Brassicæ or a hybernated G. Rhamni—which I could not say, it being too far off. I see Rapæ is plentiful enough now in clover-fields, but I have only seen two or three Brassicæ: last season there were thousands here. I have not seen C. Edusa yet this season, but in 1867, on the 19th of June, a friend and I caught five. I have found most insects greatly behind this year.—*G. Lock; Turkish Baths, Dock Street, Newport, Mon., August* 2.

Scarcity of White Butterflies in Gloucestershire.—I have observed the scarcity of white butterflies this season. Only a very few of Rapæ have been seen here, compared to the large numbers which appeared last season. I do not recollect having seen one specimen of Brassicæ this summer.—*C. J. Watkins; Painswick.*

Scarcity of White Butterflies, &c., near London.—Both the common whites, Brassicæ and Rapæ, have been "conspicuous by their absence" wherever I have been this season in the vicinity of London in the south and west, and also near Gravesend, in Kent. The first on the wing is usually Rapæ, but I did not see one throughout April. I have not the date, but think it was near the end of May before they appeared about my garden here; nor did I see any about Fulham, Acton, Hammersmith, &c., which I occasionally visit. In May (about the middle of the month) there were a few near Greenhithe, mostly haunting the woods, which was singular. I have not yet seen larvæ of this species this season. The disappearance of Brassicæ was very remarkable, for few occurrences in insect life are more regular than the emergence of this butterfly's pupa during May or at the end of April. They came not, however, this season, though the larvæ were plentiful in the autumn preceding, and were feeding until quite late in October on the Nasturtium in my garden, some being very young then, others nearly adult. The latter went into pupa; the former, I suspect, died off in November, at the coming in of cold weather, though some observer (Jenyns, I think) states that some larvæ of this species hybernate. Unquestionably this is a bad butterfly year, speaking generally. A. Cardamines I have not seen at all in the suburban districts about here. The first brood of C. Pamphilus, usually out early in May, on Wimbledon Common was quite three weeks behind time. H. Janira, mostly on the wing there by June 1st, was only represented by a few stragglers towards the end of the month. H. Tithonus was later also, but very abundant. P. Alexis has been very scarce, so far as I have noticed. All this is doubtless attributable to the double effects of excessive drought last summer in destroying many young larvæ, and the heavy rainfall during the winter months, likewise prejudicial in a measure.—*J. R. S. Clifford; 59, Robert Street, Chelsea, August* 7, 1869.

[These records, elicited by my note, seem to establish the fact that the scarcity of white butterflies this year has been as general as it has been unusual. Many similar records have been received, but want of space compels their omission. *E. Newman.*]

Occurrence of White Butterflies at Truro. — I have just read your paragraph in the 'Entomologist' on the scarcity of white butterflies, and beg to inform you that here P. Rapæ abounds. After reading it I went out into the garden, and was met at the door by a P. Brassicæ, though I cannot recollect having seen another this season, but I have not been on the look out for them.—*Arthur P. Nix; Truro, August* 1.

Cidaria reticulata, W. V., *at Windermere.*—On July 28th I beat a female of this species out of mixed underwood near where I had taken the species before, in a wood on the banks of Windermere Lake, opposite the town of Bowness. Emmelesia tæniata and Larentia olivata were fine, and not scarce in the woods around Earthwaite Lake on the 27th, but were wasted at Birthwaite Wood and in the woods on the Lancashire side of Windermere Lake on the 26th of this month.—*C. S. Gregson; July* 30, 1869.

Crymodes exulis in Scotland. — A correspondent informs me that Dr. White has taken this insect in Scotland. The number of specimens and the locality not given.—*E. N.*

Phylloxera coccinea, an Insect infesting the Oak.—I have observed the oak-leaves about Leominster this year to be infested and greatly disfigured by a minute winged insect, which I had not noticed until the present year. Having sent to Mr. Walker a supply of the eggs, larvæ, pupæ and perfect insects, he has, with his usual courtesy, handed me the following note: — "The insect in question is Phylloxera coccinea (see Zool. S.S. 1333). I have observed it for many years in Middlesex and Essex, but am not aware that any one else has noticed it in England. I do not think it is so exhausting to the leaves as the oak-spangles, which are much more numerous and more general. It occurs here and there near London, but rarely in great abundance. The leaves infested by it have spots like those caused by the oak-spangles. In August and in September it may be seen sitting in the centre of a cluster of eggs, which are arranged transversely in four concentric circles, and the outer circle is composed of about forty eggs. The second generation is soon hatched, and at the end of autumn the insect passes away from the withering leaves without any indication of the continuance of its existence during the winter. The oviposition and the hatching of the eggs continue through August. I have not observed the winged female laying eggs. The winged form appears in August. The eggs are devoured by a little white larva, perhaps that of an Agromyza? and by another little larva which has a black head and short legs, and is half a line in length. Sometimes a large Syrphus-larva consumes all the eggs round the mother Phylloxera. A fourth kind of larva occurs with the Phylloxeræ, but I have not observed it to attack them: it is more active than the others, and has somewhat the appearance of a Dorthesia or of a Coccus, being covered with white laminæ which extend beyond it on each side. Fonscolombe mentions that the Phylloxera is devoured by a larva covered with white down, and is that of a Scymnus (Coccinella pygmæa? *Oliv.*)" — *Id.*

Vanessa C-album. — These butterflies, which seemed to have become scarce at Leominster, have reappeared, and are just coming out: all I have seen have the under side dark brown irrorated with metallic-green. — *Edward Newman; Leominster, August* 18, 1869.

Stauropus Fagi and Acronycta Alni near Hereford. — I have taken here three larvæ of Stauropus Fagi on very small oak trees in a young plantation, and one larva of Acronycta Alni from alder—S. Fagi on the 13th and 19th, A. Alni on the 7th. — *F. E. Harman; The Valletts, Whitfield, near Hereford, August* 23, 1869.

Stauropus Fagi at Shirley.—On the 23rd of July I took a fine male specimen of Stauropus Fagi while at rest on a beech tree near Shirley Common, being the second I have taken this season.—*E. Harper, jun.*

Noctua extrema of Hubner. — In the Ent. Mo. Mag. for July, Mr. Stainton translates some remarks of Dr. Staudinger's on this most threadbare subject: the abstract amounts to this, "In closely allied species do not describe or figure from a solitary specimen," — advice in which I most heartily concur.—*E. Newman.*

Captures at Brockenhurst, Hampshire. — Some of your readers may be interested in the captures, by myself and Mr. Isaac Cooke (son of Mr. Nicholas Cooke), made during a stay at Brockenhurst and neighbourhood, Hampshire, from the 5th to the 26th of June last. The weather was not favourable, being wet and cold. We sugared almost every night, but took very few Noctuæ. One day was spent at the Isle of Wight. L. Sinapis, P. Cratægi, A. Euphrosyne, A. Selene, M. Cinxia, T. Rubi, L. Adonis, Alsus, S. Alveolus, H. Sylvanus, S. Ligustri, C. Porcellus, M. Fuciformis, Bombyliformis, Z. Trifolii, L. Rubricollis, E. Cribrum, E. Russula, C. Villica, A. Mendica, O. Pudibunda, B. Rubi, E. Advenaria, V. Maculata, E. Fasciaria, E. Dolobraria, B. Roboraria, Consortaria, T. Crepuscularia, T. Extersaria, N. Viridata, E. Porata, Punctaria, Trilinearia, Orbicularia, Pendularia, A. Subsericeata, M. Liturata, S. Belgiaria, M. Euphorbiata, A. Strigillaria, L. Adustata, E. Rectangulata, M. Albicillata, A. Plagiata, T. Chærophyllata, T. Falcula, T. Batis, D. Orion, A. Leporina, A. Caliginosa, A. Luctuosa, E. Fuscula, E. Mi, Glyphica, P. Ænea, H. Barbalis, C. Chrysonuchellus, besides plenty of common species. — *Samuel J. Capper; Huyton Park, near Liverpool, July* 19, 1869.

Notes on the Habits of Mordellistena.—In the spring of the present year the Hon. T. de Grey called my attention to a larva, which he thought was that of a Longicorn, living in the stems of Silene in the corn-fields, and looking like a miniature representative of Agapantia lineatocollis, common in the neighbouring thistles. This I have since bred, and it proves to be Mordellistena pumila. It might be collected in some abundance by taking the old dry stems of the plant about May. I find also, on reference to other works, that the rare little M. inæqualis, *Muls.* (pusilla, *Redt.*) occurs in a similar manner in stems of Artemisia; but it must feed also on other plants, as I know of no Artemisia here, although the species is not rare. Amongst my series of M. pumila I find some examples of M. brevicauda, *Boh.*, distinguished by its anal style being much shorter and the posterior angles of the thorax not being produced.—*G. R. Crotch.*

Duplicates, Desiderata, &c.

Duplicates. —After September 13th I shall be happy to send specimens of Saperda Carcharias to any one wanting them.—*W. Jagger; St. Ives, Hunts.*

Duplicates. — Edusa, Cratægi, Sinapis, Galathea, Semele, Sibylla, Cardui, Polychloros, Paphia, Paphia *var.* Valezina, Adippe, Aglaia, Selene, Athalia, Lucina, Rubi, Corydon, Adonis, Comma, Globulariæ, Mesomella, Dominula (bred), Russula, Villica (bred), Plantaginis, Batis, Turca, Caliginosa, Fimbria, Exoleta, Pyramidea, Myrtilli, &c. *Desiderata.* — Artaxerxes, Actæon, Bombyliformis, Bembeciformis, Culiciformis, Ichneumoniformis, Philanthiformis, Formicæformis, Arundinis, Furcula, Bifida, Fagi, Palpina, Chaonia, Dodonæa, Dictæoides, Carmelita, Cassinea, Trepida, Coryli, Gonostigma, Cœnosa, Aureola, Stramineola, Pygmæola, Muscerda, Quadra, Senex, Urticæ, T. Cratægi, Versicolor, &c. — *Herbert Goss; 8, Goldsmid Road, Brighton.*

Duplicates for Exchange. — Machaon, Edusa, Hyale, Argiolus, G. C-Album, Betulæ, Adonis, Semele, Cinxia, Ocellatus, L. Dispar, Monacha, B. Quercus, Potatoria, L. Salicis,

Z. Æsculi, Neustria, Fuliginosa, Dominula, Quercifolia, Carpini, Illustraria, Angularia, Pictaria, Ulmata, Undulata, Spartiata, Juniperata, Aurantiaria, Pennaria, Decolorata, Multistrigaria, Boreata (male and female), Piniaria, Aversata, Suffumata, Leucophearia, Diluta, Flavicornis, Upsilon, Aprilina, Nebulosa, Lucipara, Fimbria, Festiva, Hepatica, Basilinea, Oxyacanthæ, Vaccinii, Plecta, Crassalis, Hyalinalis, Flammealis, Angustalis, &c.; well-set and in good condition.—*G. Elisha; 2, Cross Street, Ashley Crescent, City Road.*

Duplicates.—L. Helveola, V. Maculata, E. Decolorata, S. Undulata, C. Diffinis, E. Advenaria, S. Irrorella, P. Hippocastanaria, E. Pusillata, H. Crassalis, B. Hyalinalis. *Desiderata.*—L. Sinapis, A. Paphia, A. Aglaia, A. Adippe, M. Artemis, M. Athalia, V. C-Album, V. Polychloros, L. Sibylla, E. Cassiope, E. Blandina, T. Rubi, T. W-Album, T. Pruni. —*W. E. Davis;* 31, *Cowper Street, City Road.*

Exchange.—I have a number of S. American Lepidoptera and Coleoptera, set and unset, and in fine condition, to exchange for foreign Lepidoptera and Coleoptera in good condition; also fresh and well-set British specimens of G. Rhamni, C. Edusa, C. Hyale, P. Brassicæ, A. Galathea, V. Io, A. Paphia. Aglaia, Adippe, A. Selene, M. Athalia, T. Quercus, P. Alsus, P. Corydon, P. Adonis, to exchange for British butterflies and moths.—*The O'Reilly;* 6, *Denmark Terrace, Brighton.*

Duplicates.—A few good specimens of L. Arion, also bred specimens of S. Tiliæ and L. Dispar. *Desiderata.*—P. Cratægi, V. Polychloros, L. Sibylla, A. Iris, A. Atropos, M. Fuciformis, M. Bombyliformis, E. Russula, E. Versicolor, &c. —*C. J. Watkins; King's Mills, Painswick, Gloucestershire.*

Duplicates.—I have the following insects, all in good condition and well set, to exchange:—T. Subtusa, S. Papyratia, C. Diffinis, L. Helveola, X. Citrago, A. Luctuosa, M. Albicillata, A. Ulmata, B. Hyalinalis, P. Carnella.—*A. Harper;* 37, *Mansfield Street, Kingsland Road, London.*

Duplicates.—I have some pupæ of E. Lanestris which I should be glad to exchange for pupæ of any of the Nocturni. Those not hearing from me within a week will kindly conclude that I do not require their offers.—*M. A. Pitman;* 8, *Dacre Park, Lee, Kent.*

Duplicates.—I have the following insects to exchange for any local species (my wants are too numerous to mention):—

C. Ligniperda, G. Quercifolia, A. Aprilina, S. Dealbata, E. Trilinearia, P. Machaon, S. Undulata, H. Wavaria, B. Perla, L. Salicis, M. Cribrella, H. Crassalis, C. Testata, C. Corylata, L. Didymata, B. Rhomboidaria, H. Prasinana, S. Fuliginosa, S. Tiliæ, S. Populi, &c. — *J. A. Clark; 11, Duncan Place, London Fields, Hackney, N.E.*

Duplicates.—I have a few duplicates of A. Tritici, M. Literosa, P. Corydon, M. Arcuosa, E. Decolorata, L. Marginata and L. Testacea, for which I should be glad to receive offers. I may add that my stock of Loniceræ has long been exhausted. — *R. E. Brameld; Belvoir Terrace, Sneinton, Nottingham.*

Duplicates. — A. Galathea, A. Paphia, C. Cardui, P. Machaon, L. Argiolus, T. Betulæ, T. Quercus, A. Aglaia, L. Quercifolia, B. Neustria, A. Villica, C. Dominula, B. Perla, S. Undulata, H. Crassalis, H. Rubiginata, T. Fimbria, A. Pyramidea, C. Scrophulariæ, Z. Æsculi. I shall be glad to receive offers.—*E. Barlow; 4, Bath Place, Haggerstone.*

Duplicates.—A. Rubricata (not in first-rate condition), and M. Cribrum. *Desiderata.*—C. Elpenor, C. Vinula, L. Rubi, G. Quercifolia, C. Prasinana. — *W. H. Cole; School Hall, Bury St. Edmunds.*

Exchange. —I shall endeavour to make a suitable return to any Lepidopterist who will supply me with larvæ, pupæ or imagos of any of the following insects:—Dicranura bicuspis, D. furcula, D. bifida, Stauropus Fagi, Petasia nubeculosa, Gluphisia crenata, Ptilophora plumigera, Notodonta cucullina, Carmelita, bicolora, dictæa, trilophus, trepida, chaonia, dodonæa.—*G. T. Porritt; Clare Hill, Huddersfield.*

Duplicates. — E. Blandina, H. Semele, A. Aglaia. *Desiderata.* — L. Sinapis, A. Adippe, M. Artemis, M. Athalia, V. Polychloros, A. Iris, L. Sibylla, C. Davus, T. Pruni, E. Cassiope, L. Arion, H. Paniscus, H. Actæon. — *F. Raine; South Road, Durham.*

Duplicates.—I have good and well-set specimens of H. Comma, P. Corydon, A. Aglaia, A. Ligustri, D. Ochroleuca, S. Dealbata, for which I shall be glad to receive offers.— *G. Parry; Church Street, St. Paul's, Canterbury.*

Duplicates and Desiderata. — I send the names of a few Lepidoptera that I should be glad of, although there are a very great many more that I have not got: — Leucophasia

Sinapis, Pieris Daplidice, Argynnis Lathonia, Melitæa Athalia, Erebia Cassiope, E. Blandina, Satyrus Hyperanthus, Thecla Rubi, W-Album, Pruni, Polyommatus Acis, Alsus, Arion, Hesperia Paniscus, Linea and Actæon. I have by me to spare, if any one is in want of them, A. Cardamines, G. Rhamni, C. Edusa, Hyale, V. Cardui, Io, Urticæ, P. Adonis, Corydon, Argiolus, H. Sylvanus, Halia Wavaria, Botys Urticalis, C. Dotata, L. Pallens, C. Dominula, C. Nupta, S. Populi, and P. Meticulosa.—*H. Mobbs; Gore Court, Sittingbourne, Kent.*

To Contributors. — Please send notices of Exchange as early as the 20th of the month, and write the names of insects legibly and correctly.—*E. Newman.*

H. Jenner-Fust. — The fly is Asilus crabroniformis, common during August in heathy situations.—*Id.*

Change of Residence. — The Rev. Joseph Greene's postal address is Eveline Villa, Apsley Road, *Redland*, Bristol; not as given last month.

Change of Residence. — F. E. Harman, from Cirencester to The Valletts, Whitfield, near Hereford.

Scudder's 'Butterflies of New England.' — A number of living butterflies have been sent in cotton wool, and although a day upon their journey, were received alive and in good condition: those who live near Boston might try this method, but we think that most persons would be interested in raising the larvæ themselves. In attempting to obtain eggs for this purpose, it is better not to select the freshest butterflies, as their eggs will often prove undeveloped, or at least unimpregnated. It should also be remembered that the males usually appear about a week before the females, and experiments would therefore be more likely to succeed if made about a fortnight after the species is first observed. In answer to repeated inquiries, we will state that the males of butterflies may, in general, be distinguished from the females by a series of clasping hooks which protrude from the orifice at the tip of the abdomen: frequently these are effectually concealed by long scales. In a number of families the sexes can be determined by the partially undeveloped condition of the front legs of the male: collectors also know many species by their colours. The proposed volume will include a history and description of the parasites of butterflies. Dr. Packard has kindly promised his assistance in describing these parasites, and examples of every kind, and in large numbers, are desired. They should be accompanied by specimens of the species infested, and, if possible, by such as show the mode of attack: the fullest observations on the time and manner of attack, and on the subsequent life of the insects, will be acceptable. All specimens will be returned, when desired, by the end of the year. Complete lists of the butterflies found in different localities, both in New England and the adjacent regions, are wanted, and especially if accompanied by careful memoranda of the exact times of the first appearance, and of the duration of each species. It will be necessary to receive insects from every possible quarter, to arrive at a definite knowledge of their habits. To secure this more effectually, Mr. Scudder will name any local collection of butterflies sent to him with notes, at the Boston Society of Natural History, about the 1st of October: such collections would be returned before the 1st of January. For the safety, however, of his own collection, and of others entrusted to him, it will be necessary to return at once, unnamed, any collection showing traces of having been previously attacked by museum pests. The amplest credit will be given in the work for every item of scientific intelligence received. We urge our readers to assist in this undertaking to the extent of their ability. With such material aid, the volume cannot fail to supply a need which has long been felt.—*American Naturalist.*

Insects for Sale or Exchange. — Pruni, 6d.; Betulæ, 6d.; Paniscus, 6d.; T. W-Album, 8d.; Helveola, 6d.; B. Castrensis, 8d; Advenaria, 4d.; Cæsiata, 4d.; Trista, 4d.; Connexa, 4d.; Ulmata, 3d.; Multistrigaria, 4d; Rusticata, 6d.; Dubitata, 4d. Upsilon, T. Subtusa, Phragmitidis, C. Diffinis, Porcellus, Nivearia, Unca, Margaritalis, Sticticalis, Stramentalis, Formosella, N. Angustella, B. Pandalis, Crassalis, Carnella, Cribrella. Insects and pupæ bought or exchanged.—*W. Downing; Hoddesdon, Herts.*

THE ENTOMOLOGIST.

No. 70.] OCTOBER, MDCCCLXIX. [Price 6d.

Description of the Larva of Acronycta Myricæ.—It rolls in a ring on being touched, and remains in that position for a minute or more. The head is glabrous, slightly narrower than the 2nd segment, and not perceptibly notched on the crown: the division of the body into segments is clearly marked, and the segments themselves are very slightly wrinkled transversely; each segment has also a transverse series of ten warts, and each wart emits a radiating fascicle of stiff bristles; these warts form longitudinal as well as transverse series, and the two series nearest the middle of the back are considerably larger than the rest, and are rendered more conspicuous by their paler colour. The colour of the head is black, with a Y-shaped white mark on the face, the stem of the Y pointing towards the back and separating the two lobes of the head; there is a transverse gray line on the labrum, and the basal joint of the antennal papillæ is also gray: the body is intensely velvet-black, the warts generally slightly paler, and the two dorsal series of larger warts gray; immediately behind the head is a narrow transverse red line, and on each side, passing through the fourth longitudinal series of warts, is an interrupted and most indistinct series of amorphous red spots; the legs and claspers are black; the bristles are either gray or black, the latter predominating. I am indebted to Mr. Eedle for a specimen of this larva, found on the moors near Rannoch during the past summer: he is unable to say exactly the plant on which it feeds in a state of nature, but in confinement I found it eat lilac and willows very freely. It was full-fed on the 24th of August.—*Edward Newman.*

Description of the Larva of Acronycta Menyanthidis.—It rolls in a ring when touched, and remains in that position a minute or more. The head is glabrous, slightly narrower than the 2nd segment, and not perceptibly notched on the crown: the division of the body into segments is clearly marked; the segments themselves are very slightly wrinkled transversely; each segment has also a transverse series of ten warts; on each side are five, three of which are above and two below the spiracles; each of these warts emits a radiating fascicle of stiff bristles. The colour of the head is black, the basal joint of the antennal papillæ being very pale gray: the colour of the body is velvet-black, and the warts concolorous; the spiracles are white and very conspicuous, and immediately below them is a bright red side-stripe interrupted at each interstice of the segments and again below each spiracle; it might perhaps be described more exactly as a lateral series of somewhat crescentic red spots; the bristles are black or brown, some of each colour, but the latter predominating; the legs and claspers are black. I am indebted to Mr. Eedle for a supply of this larva, which he found in some plenty at Rannoch: it feeds freely on willow in confinement, and on the 1st of September my specimens spun loose silken cocoons among the leaves.—*E. Newman.*

Larvæ of Acronycta Myricæ and A. Menyanthidis. — I incline to think that both of these, in a state of nature, feed on the dwarf willows which always abound in the subalpine regions where the moths have been found: the names of the sweet gale and bogbean, which have been applied to them, rather indicate the botanical character of the locality than the exact food-plant. The structure of both larvæ is almost precisely similar to that of those of Arctia Menthastri and A. lubricipeda, but I offer no opinion as to the desirability of approximating these two distant genera.—*Id.*

Entomological Notes, Captures, &c.

Concerning phytophagous Hymenoptera whose Larvæ are concealed. — The two great groups of sawflies whose larvæ consume the parenchyma of leaves, leaving both the cuticles intact, may be distinguished by another economic character which I find combined with a structural difference in the fore wings. The divisions I will call Druidæ and Euuræ, by no means insisting on these names, but employing them under the impression that my names Druida and Euura were the earliest by which they were designated. It may, I think, be fairly assumed the law of priority will obtain in these, as in all other instances, when the subject shall be better understood and the synonymy carefully worked out. The economic difference between the groups is that the druids seem to emit no juices deleterious to plants on which they feed, but simply separate the two cuticles from each other, consuming the parenchyma contained between them. A few only of the perfect insects have been obtained, and these appear to have two marginal cells in the fore wings. The euures, on the contrary, emit some fluid, or exercise some power still to be determined, which causes substantial galls distinctly to mark their presence: the fore wings of the perfect insects, so far as hitherto known, have but a single marginal cell. It is probable that every species of tree throughout the world supports at least one of each family, although less than thirty druids and less than a hundred euures at present figure in our scientific lists. In the United States the inquiry has been almost exclusively confined to the willow, and the crop of species that has been reaped is really marvellous. In Britain, alas! we have ascertained but two, Euura Cynips and E. Gallæ, both described by myself more than thirty years ago. Euura Cynips produces the familiar gall to be found almost everywhere on the leaves of the crack willow (Salix fragilis): this gall is of an oblong form, and protrudes equally from both surfaces of the leaf; it is usually of a red tint on the upper surface, and often has an ornamental appearance. Other species of Salix have their Euura galls, and one of these, discovered by Mr. Lees, is remarkably beautiful; it is spherical and highly coloured, resembling a cranberry. This beautiful object was made known to naturalists in the pages of the 'Entomologist.' Next to the willow, the alder seems most obnoxious to the attacks of a Euura: the parent insect deposits its eggs in a double series on the back of the leaf, one in the axil of each lateral rib, and almost touching the midrib of the leaf: the galls appear in the same situation on the upper side of the leaf, and their appearance, thus regularly arranged, is very striking. I know nothing further of its economy: the larva is readily found by cutting open the galls, and its lethargic habits are favourable to the compilation of an accurate life-history, which I trust soon to receive from the pen of Mr. Healy, the *facilis princeps* of cryptocampic entomologists, and to whom I have transmitted specimens of the galls: I propose giving this species the provisional name of Euura Alni. Next to the alder, the cultivated varieties of pears seem most subject to the attacks of a Euura; and in this instance the galls project only from the *under* side of the leaf: I have gathered one hundred of these galls from a single tree, and in one instance only have I found two on a leaf. After the escape of the perfect insect the galls become somewhat shrivelled, and the upper surface assumes a brilliant orange colour: I give this species the provisional name of Euura Pyri. The oak, so proverbial for its multiplicity of its Cynips-created galls, is infested by a species of Euura: it is far from common, and its gall, like that of the willow (Salix fragilis), projects from *both* sides of the leaf: I propose for it the name of Euura Quercus. It will be interesting to determine whether this species infests both the supposed species of British oak: I have hitherto only found it on that called Quercus pedunculata. The Druidæ are ubiquitous; every tree, every shrub, every herb, appears to support a species. The lordly oak, the graceful birch, the glutinous alder, the polynymic bramble, the sprightly agrimony, the gay buttercup, and the humble tormentil, not to mention the ash, hazel, hornbeam, maple, elm, beech and wych-elm, are alike subject to their attacks: the brown blotches on leaves, universally attributed to some unascertained lepidopteron, dipteron or coleopteron, proclaim their presence: their only name at present is legion; but as Mr. Healy, year after year, throws the light of his researches over the Cimmerian darkness of our ignorance, we may hope to receive for them a nomenclature and arrangement. The most common of all galls are those of the spruce fir, which are supposed by Mr. Westwood to be the work of a Hemipteron, as noticed in the 'Gardener's Chronicle' for 1852, No. 37, p. 580. The galls produced by this are peculiarly beautiful; like the polymorphous galls of Cratægus oxyacantha and Ulmus campestris, they appear to originate in the woody fibre and not in leaves or buds; nevertheless, as the twig swells under the expanding influence of misdirected sap, these galls assume a regular figure, and, as in innumerable other instances, simulate in some degree the fructification of the tree which bears them. But perhaps the most interesting of the native galls observable at this season are those of Rubia peregrina, a plant rarely met with except on the south coast of England, especially in the Isle of Wight and Cornwall. This beautiful little gall so exactly resembles the fruit of the Rubia, especially when both are slightly shrivelled after gathering, that it is absolutely necessary to cut open both productions, and expose the interior, before deciding whether it contains the usual seed or the larva of a Cynips: in the latter case the substance is always of a spongy texture; the size, colour and situation of the two are absolutely identical: the Cynips which produces the gall is unknown: I call it provisionally Cynips Rubiæ. Lastly, a campanulate gall, about the size and shape of that delicate little object, a spider's nest, was very commonly suspended from the under side of the leaves of the alder; its sickly yellow-green colour made it very conspicuous when the leaf was turned up, but from the upper side it was invisible.—*Edward Newman.*

White Butterflies, &c. — The comparative rarity of white butterflies has at least not been universal. P. Brassicæ, Rapæ and Napi have been in abundance here all the summer. A. Cardamines was in profusion till the very end of June. We have very few varieties of butterflies here, but our usual species occurred plentifully. Atalanta was very late in appearing this year: I saw the first specimen on the 26th of August. Sugaring has proved useless. At light I have had but indifferent success. I never saw so few Coleoptera. I am but a novice in collecting, but certainly have fared worse this season than ever before. This time last year the garden swarmed with P. meticulosa and P. Gamma; this year, as yet, not one has appeared.— *W. Douglas Robinson; Kirkennan, Dalbeattie, September* 9, 1869.

White Butterflies.— In North Wales, during the first part of this month (August), white butterflies appeared to me to be particularly numerous, more especially P. Brassicæ. — *Alfred W. Druce;* 21, *Cheyne Walk, Chelsea, August* 25.

White Butterflies, &c., at Thruxton. — Pieris Brassicæ I have not seen until to-day (Aug. 19), when I observed a few specimens on some plants in the kitchen garden, but I have every reason to think they will be quite as common as usual next month. P. Rapæ appears to be about as abundant as in ordinary seasons. Other butterflies peculiar to the neighbourhood seem particularly plentiful; and I have also noticed Colias Edusa, with one or two other rarities. Both the larvæ and pupæ of Acherontia Atropos have occurred in at least two gardens in this village, but I have failed, when handling the specimens, to detect the "cry" so observable in the perfect insect. The genus Vespa is almost wholly unrepresented in this immediate neighbourhood, which is the more remarkable as queen wasps of the four common species were abundant in the spring. A few days since I noticed a solitary specimen of V. rufa in the scullery window.—*Henry Reeks; Thruxton, August* 19, 1869.

Scarcity of Butterflies in Ireland.—I have observed a great falling off in the number of Pieris Brassicæ here this year, but the same may be said of other species; for instance, C. Cardui was very abundant here last year, and I have not seen a single specimen this year. I observe a considerable deficiency of almost all the diurnal Lepidoptera, but the abundance of larvæ is extraordinary: those of S. Carpini, D. vinula, S. Populi, &c., are more abundant than I ever recollect. — *S. R. Fetherstonhaugh; Glenmore, Crossmolina, Ireland.*

Larva of Lycæna Arion.—Mr. E. Dembski, of Cheltenham College, announces that he has reared the larva of L. Arion: he says it is onisciform, and slightly flattened on the sides, the back being rather convex. Head very small, black or blackish brown. Body greenish, the dorsal and subdorsal lines represented by a row of three black spots on the middle of each segment. Legs almost imperceptible. Feeds on the flowers of the common thyme, on which Mr. Dembski found the eggs.—*Ent. Mo. Mag. for August.*

Acherontia Atropos in Durham.—Eight larvæ of Atropos have been taken here during the last fortnight.—*F. Raine.*

Deilephila lineata at Lewes. — Yesterday morning I saw, on the setting-board of a friend of mine in this town, two [specimens of] D. lineata, which have been brought to him within the last few days.—*J. H. A. Jenner; Lewes, May* 27, 1869.—*Ent. Mo. Mag. for July.*

Sphinx Ligustri feeding on Willow. — Is it a common thing to find the larvæ of S. Ligustri feeding on the willow?

A few days ago I knocked one down with a stick, and, to make sure that it feeds on the above tree, gave it some in a box, which it ate readily. I placed the larva in a box, with several others of the same genus, with sprigs of the privet, but it preferred the willow. — *A. B. Braine; 47, Ladbroke Grove, Notting Hill, September* 12, 1869.

Agamic Reproduction of Sphinx Ligustri. — About three weeks ago I had some eggs from a bred female of Sphinx Ligustri: she had no intercourse with a male, but the eggs have all hatched. Is not this unusual? — *Arthur P. Nix; Truro.*

[Similar instances have been recorded. See my Essay on Physiological Characters, p. 12.—*E. Newman.*]

Pericallia Syringaria near Sheffield. — On July 24th I captured a fine male specimen of Pericallia Syringaria in Ecclesall Wood. On the same evening a female was captured in the same wood by G. Saltfleek, a youth residing in Broomhall Street, Sheffield. I believe the insect has not been taken in this neighbourhood before. — *Wm. Layaock; 36, Randall Street, Highfield, Sheffield, August* 24, 1869.

Hyria auroraria in Surrey.—In the 'Field' of August 14th there is a notice of the capture of Hyria auroraria (the golden-bordered purple) at Egham, in Surrey.—*J. C. Wesley; Wetherby, Yorkshire, August* 24, 1869.

Aplasta ononaria, &c., at Folkestone.—I had the pleasure of capturing two female specimens of Aplasta ononaria at Folkestone last July. Sesia chrysidiformis and S. ichneumoniformis occurred freely. Heliothis peltiger, H. marginatus, Spilodes palealis, and Camptogramma fluviata also came to my net. Chœrocampa porcellus was unusually common this year. Dicranura vinula was most abundant, from the egg to the imago; the pupæ and the larvæ, in various stages, were all to be seen at the same time. Tortrices have been rather scarce this season: Eupœcilia flaviciliana, E. notulana, Stigmonota leplastriana, Catoptria citrana, Cochylis dipoltana, and Tinea subbaumanniana, are a few of the best I could net: I allude to doings on the coast. — *F. O. Standish; 2, Alfred Cottages, Warner Road, Camberwell, S.E., September*, 1869.

Camptogramma fluviata and Hoporina croceago.— I have bred a goodly number of each—the former from the egg, from a female taken on the coast, and the latter from larvæ collected in Darenth Wood.—*F. O. Standish.*

Cirrœdia xerampelina in the Isle of Man. — I have pleasure in recording the occurrence of this beautiful insect in the Isle of Man. I have received a fine series captured there, during the present month, by Mr. Warrington, of Douglas. The specimens are all very richly coloured, and some of them present a remarkable variation from ordinary English examples, the golden yellow of the fore wings being replaced by reddish brown; two narrow lines of yellow only remain bordering the median band, the inner margin of which is not indented near the costa, but runs in a straight and uninterrupted line across the wing: in general aspect the moth is more like Leucania conigera than Xerampelina. Mr. Doubleday informs me that these specimens are identical with the form of Xerampelina which is found in Central France, and that he is not aware that the variety has been previously taken in the British Islands. The appearance of the same variety, and that a very striking one, in localities so widely separated by distance and climatal conditions as Central France and the Isle of Man, is somewhat startling, and shows how little we really know of the causes which govern the production of varieties, and their preservation or extinction in different portions of what we may suppose was once a continuous territory. In the South of France, Mr. Doubleday informs me, Xerampelina assumes another form, being very small and dull-coloured. I may remark that the ash, on which the larva feeds, is the most abundant forest tree of the Isle of Man, and flourishes exceedingly in its damp and warm climate. Xerampelina has been found in all the divisions of the United Kingdom, but I believe is nowhere considered a common insect. Probably it is overlooked, appearing in the perfect state at a period of the year when most collectors have retired for the season: the Isle-of-Man specimens were found at rest on the trunks of ash-trees; the moth also comes freely to sugar. In Scotland I only know of the capture of one specimen, by Mr. Chapman, at Gare-Loch-Head, in 1859; and in Ireland also of a single example near Drumcar, by the Rev. H. Harpur Crewe, in 1868; both of the ordinary English type. — *Edwin Birchall; Newlay, Septenber* 20, 1869.

Cirrœdia xerampelina at Worcester. — I have taken two specimens of C. xerampelina this month (September), both at light.—*C. R. Doward; 41, Copenhagen Street, Worcester.*

Cirrœdia xerampelina. — In the June number of the 'Entomologist' was recorded the taking by me of forty-one larvæ of C. xerampelina, and in consequence of that notice I had many applications for the perfect insect: these have now all emerged, but I am sorry to say they came out earlier than I expected, and during my absence from home for a few days. On my return home, on the 24th instant, I found them all battered and worn, so much so that nearly all of them had the markings entirely effaced from the wings, and out of forty there were only five or six which I took the trouble to pin. A considerable number of eggs have been deposited, which I hope may prove fertile, but I fear the larvæ will be difficult to rear. — (*Rev.*) *Bernard Hartley; Park View, Pontefract, August* 26, 1869.

Dianthœcia compta and D. Barrettii at Howth.—"I have lately been successful in capturing a few examples of D. compta and several of D. Barrettii." — *E. G. Meek, in Ent. Mo. Mag. for August,* 1869.

Dianthœcia Barrettii in the Isle of Man. — "A few days afterwards I went to the little kingdom, and proceeded to Port Jack, and before I slept I secured and set a fair specimen of D. Barrettii. This year I have taken it again there." —*C. S. Gregson, in Ent. Mo. Mag. for August,* 1869.

Aplecta occulta in Essex. — I took two fine specimens of this moth at sugar in Epping Forest on the 26th of August. —*R. Meldola; Park Place, Leyton.*

Hydroporus minutissimus in Devonshire. — During a late excursion to Slapton, about seven miles to the westward of Dartmouth, a single example of Hydroporus minutissimus was discovered by my wife, amongst the small submerged shingle at the edges of the Ley; and being thus warned of its presence, we continued to search patiently until a tolerable series had been obtained. Its habits are precisely similar to what I have observed in the Canary Islands and elsewhere, the species delighting in shallow, clear water, amongst the shingle of which it principally resides.—*T. V. Wollaston, in Ent. Mo. Mag. for August,* 1869.

Thread-worms produced from Larvæ, confirmed. — In the

'Entomologist' for July, 1868 (No. 55), I gave an account of two thread or cotton-worms ejected from a larva of Liparis monacha. I have now the satisfaction of giving further proofs, which leave but little doubt that larvæ are frequently attacked by this singular creature. Last June I had a number of the larvæ of Hoporina croceago, and lost several from the attacks of the thread-worm, of which I had some eight or nine. Their length was from six to eight inches, and they live but a few hours after being ejected from the larva. Mr. Purdey, of Folkestone, informed me that he took a nest of the larvæ of Hyponomeuta padella, and to his surprise, when he looked for the larvæ, they had transmuted into a mass of small thread-worms, leaving the skins of the larvæ only: I had the pleasure of seeing the worms and larva-skins. I have also heard of other instances of thread-worms coming from larvæ. The problem is, in what stage do these worms first appear in the larva? — can it be in the egg state, as is the case with the ichneumon when it attacks larvæ? Could this be solved it would add another scrap to Science. *F. O. Standish; September*, 1869.

Pine-shoots destroyed by Hylurgus. — Every grower of conifers must have been struck this summer with the unwonted appearance of the young and immature shoots of all our larger pines; instead of that erect and vigorous growth which indicate health, the top of each shoot has become flaccid, and has bent over, presenting an appearance that some of my correspondents have compared to the nodding plumes on a hearse. I have received specimens from Sawbridgeworth, Waltham Abbey, Hertford, Witley, Haslemere and Petworth. In every instance I have laid open one or more of the shoots, and have invariably found a small blackish beetle gnawing his way upwards along the very centre of the shoot: this is Hylurgus piniperda in its mature or imago state: Ratzeburgh has some excellent remarks on this destructive insect in his 'Forst-insecten,' and the late Dr. Lindley made them a subject of inquiry, and the result was published many years back in Curtis's 'British Entomology,' fasc. 104. Although the injury of which my correspondents complain has been in every instance confined to the *young shoots*, I have found the same species many years back on the *stumps* of felled trees at Birch Wood, and also in Greenwich

Park perforating the *bark* of those picturesque old Scotch firs that adorn the slopes of the Observatory hill. I am unable to suggest a remedy, but perhaps some of the sufferers may take comfort in the assurance that all attacks of insects are intermittent, and a year of excessive injury is generally followed by several years of entire exemption from the plague.—*E. Newman.*

The Ladybirds and Wall-fruit.—The ladybirds, or, as they are called here, "cow-ladies," appeared in unusual numbers in this neighbourhood about the third week in July, and continued to increase until about the third week in August: from that date to this (September 8th) they have gradually but very perceptibly decreased, not, however, before they had thoroughly fulfilled their mission; in fact no aphides are now to be seen, and the ladybirds are flocking to the ripe wall-fruit, to the sweet juices of which they seem very partial. I have been unable to detect more than one species, the 7-punctata; but I found individuals differ considerably in size, *viz.*, from 0.30 to 0.40 inch, which difference I think is not due to sex alone, as I have found an abundance of intermediate sizes. While on the subject of ladybirds I should be glad to learn the origin of the old nursery rhyme,

> "Lady-cow, lady-cow, fly away, fly;
> Your house is on fire, your children will die."

—*Henry Reeks; Thruxton.*

Entomological Notes from Bury.—I owe you some account of my entomological proceedings this summer. I have found plenty of the imago of A. sulphuralis, but have been unable to find any of the larvæ, though I searched for them on Convolvulus arvensis in the places where the imago was most abundant. A large batch of the eggs that I sent to Mr. Doubleday has proved abortive. The larva of Lithostege grisearia has been as abundant as the imago, but much infested with ichneumons, which spin a very pretty gray and white cocoon, and appear in August. The second brood of Spilodes sticticalis was abundant in certain fields, and I cannot believe that its normal food is Artemisia; I think it must be rather some low-growing Gnaphalium, though it is well known that the larva can be reared on Artemisia: there is not Artemisia enough in the locality to account for the numbers of S. sticticalis in particular places. In the spring I pitched upon a particular field as likely to produce Acidalia rubricata: I watched it a good many times without success, till one evening at the very end of July I found myself surrounded by pink and purple beams of light darting in every direction: these were without exception males, nor did I obtain any number of females for more than three weeks. This moth fades terribly, and a specimen that appears brilliant when alive wears a comparatively dowdy appearance shortly after death. It is very local indeed, and you might go for many miles and think yourself lucky if you obtained a single specimen, while in this field, especially in one corner of it, there were plenty. I fancied that the strawberry clover (Trifolium fragiferum) might possibly be the attraction that brought them to the spot. I have therefore tried to bring up the produce of a batch of eggs on that plant: they ate it certainly, but have deserted it for Polygonum aviculare, for which they show a decided preference. Their proper food-plant is still, I think, unknown, and can only be discovered by finding a female in the act of oviposition. It is very clear that in confinement the larva will eat several plants. I have also taken a good many imagos of Eremobia ochroleuca: I found them all, without exception, on the flowers of Centaurea scabiosa; not one was found on Centaurea nigra, which is still commoner.—(*Rev*). *A. H. Wratislaw; School Hall, Bury St. Edmund's, September* 16, 1869.

Entomological Notes from Steyning, Sussex.—I have come to the conclusion that, on the whole, insects of all kinds are not common this season. Brassicæ, which was a nuisance last year, especially on my cabbages, is quite a rarity now. Paphia, reported common at Lyndhurst, I have not seen; whereas Aglaia has been plentiful on our downs. Of the blues, Adonis, Alexis, Agestis, Alsus and Corydon have been unusually abundant, especially the first. Edusa has been scarce: a friend who went out with me in quest of them took all or nearly all we saw, amounting to twelve. Hyale I have not observed. Of Adippe I have taken but one specimen. We met on our return with hundreds of Botys flavalis, but being tired, and not knowing its local character, we secured only a few specimens. I have had three larvæ of

A. Atropos brought to me. One singular trait of this year which my friend and self commented upon was the absence of moths at sugar: I have sugared both in my own garden and in a wood near on several occasions, and have had a *nil* return: have any of your correspondents been blessed with a like result? — *M. T. White; Steyning, Sussex, Sept.* 18.

Name of a Caterpillar.—Colour apple-green corded transversely with white, the cords so interrupted on the back as to form a medio-dorsal stripe of green. The head is round and whitish, with the ocelli black and distinct; the segments of the body not apparent. When at rest the caterpillar is rolled up in a compact ring, holding on firmly by its feet alone; and when annoyed and made to move, eight pairs of claspers are seen, the terminal segments alone wanting them, these being depressed and curved inwards. It was found on Sept. 4th, on willow (Salix aurita), and in a few days spun an oval cocoon of a close texture, glossy and semitransparent, between its leaves. — *Wm. Cameron; Balquhidder, Crieff, September* 15, 1869.

[The larva is that of Tenthredo Capreæ, an insect hitherto undescribed as British.—*E. Newman.*]

A Musical Larva.—On September 10, 1868, during one of our regular Monday morning excursions, I captured on a beech tree, a short distance from London, a larva which I judged to belong to the genus Smerinthus. Its chief peculiarity, to which I wish to call attention, was its power of emitting a singing noise when handled or disturbed. The noise was similar to that produced by that pretty little beetle so common in our gardens, Lema trilineata. This is the only instance of a musical larva that I have met with, nor do I remember to have ever seen any mention in entomological books of a similar case. I should be glad to know, Mr. Editor, if you, or any of your correspondents, have ever noticed this musical power in any larva, or if you can explain the manner in which the noise is produced. My specimen was full-grown, and in a couple of days duly passed into the pupa stage under the earth in a flower-pot, which I duly deposited in my winter box that I kept buried in my garden, but to my great disappointment it shared the fate of most of the Smerinthian larvæ I have ever attempted to rear, and although it survived the winter it failed to reach maturity. I subjoin a description of this larva, as possibly some of your correspondents may recognise it: — Length 1½ inch: body tapering anteriorly. Head large, triangular, of a deep shining green colour, with lateral yellow stripes; a reddish spot at the apex; a paler green and granulated on the back of the head behind the stripes: mandibles black. Body apple-green, thickly covered with small greenish yellow granulations; the anterior segments semitransparent; on each side seven faint greenish yellow oblique stripes edged anteriorly with large granulations, the central stripes having a reddish tinge, the last stripe wider than the rest and terminating at the base of the caudal horn, the latter at an angle of 20°, recurved backwards, purplish red and thickly granulated; the anal plate with a central elongated black patch, with a larger granulation on each side: stigmata small, round, and dull red. Under surface slightly paler than the upper, with a darker central line. Feet pale green, spotted with red; prolegs greenish, semitransparent.— *E. B. Reed, in the 'Canadian Entomologist.'*

[This description corresponds very nearly to that of the larva of Smerinthus excœcatus, by Mr. Lintner (Pro. E. S. Phil. iii. p. 665). We have never ourselves met with any Lepidopterous larva that emitted sounds; the imago of Sesia Thysbe is described by Dr. Gibb (Can. Nat. and Geol. 1859, p. 122) as giving forth a loud and most striking note, "something like the squeaking of a mouse or a bat," which he attributes to the action of the respiratory organs. The well-known European death's-head moth (Acherontia Atropos) emits a somewhat singular noise, even before leaving the pupa-case, as well as afterwards; Kirby & Spence state further (letter xxiv.) that "its caterpillar, if disturbed at all, draws back rapidly, making at the same time a rather loud noise, which has been compared to the crack of an electric spark."—*Editor C. E.*]

Tortrix pomonana — The present has so far been a very trying season as regards vermin in the gardens; caterpillars and blight of all kinds have been very abundant, as might have been looked for from the mildness of the winter. But of all the pests that infest the garden, I find none so difficult to deal with as that dreadful apple-moth, the Tortrix pomonana. My apple-trees, particularly some of my espaliers, have for years been almost cleared of apples by this horrid little pest. I have been disgusted to find again and again a splendid promise of a crop, and before the season was over nine-tenths of the fruit bored through and spoilt. I have thought of various methods of eradicating or of mitigating the pest. I tried scraping and searching the bark of the trees for the grubs, and dressing with Gishurst, &c.; I also tried trenching the earth beneath them, and exposing it to the hardest frosts, and even removing it and replacing it with fresh; but it was of no use. This year I fully intended having some grand field-days, or rather nights, against the moth itself, with lantern and net, and "catch 'em alive;" but unfortunately, at the end of May, about the time of the moth's appearance, I had to leave home, so nothing was done. Lately, accordingly, I began to find my small apples being bored, when I became seized of an idea, which I impart for the benefit of your readers. The moth lays an egg in the calyx of the apple, just as it is forming from the blossom. This egg turns to a very small grub about the time that the young apple is formed. It sets to work and eats its way to the core, devours or destroys the seed, out through the other side, and into another apple, serves that the same, and, having done its will with it, on to another, and so on, until the grub, being full-fed and greatly increased in size, crawls out and bestows itself somewhere, either in the earth or bark of the tree, to become a moth and lay many eggs in due time. That the grub passes from apple to apple is certain. Take two apples off the same bunch,—you will find corresponding holes touching each other in them, and all covered with dirty brown exudation. Cut one up, and you will find the grub has pierced it entirely, and that it has left it; cut the other, and you will find the puncture only as far as the core perhaps, and then you will find the little grub. I have frequently seen them just emerged from a hole, and working their way into a fresh one in another apple. In the early part of June the grub is as small round as a very fine pin or a moderate needle. Later on, as we all know, he gets to be as big round as a fat wheat-corn, but that is not until he has pierced many apples. Now, this being the case, and that it is so I am sure, my notion is this, and I am diligently acting on it: on all the trees I can get at I search very carefully, and every apple which I can find bearing any mark of the grub's handiwork, and it is very easily detected, I carefully pick off, and have them burnt or destroyed in some way. By pursuing this method at the present time, I shall considerably reduce the Tortrix as far as my garden is concerned; but if I do not quite succeed in that, at any rate I shall certainly save a respectable share of my fruit, enough for a fair crop. Had I gone to work earlier I should have saved a big one on some trees. I find that the topmost fruit is attacked first. To give some idea of the terrible ravages of this dreadful little pest, I will cite two instances. I took a great number of pierced apples off my espaliers, still, however, leaving a very good crop indeed behind; and as I find that very few of those apples left are now touched, as I search day after day, I hope that I am pretty safe for a crop, which I am sure I should not have been had I attended to the trees later. Having finished them, I turned to some of my smaller standards, such as I could conveniently, by the use of steps, search all over, unfortunately losing some days between. The first tree I looked over was a young Wellington, some five or six years old, just coming into nice bearing. I picked 196 apples, or more than four-fifths of the crop, off that tree, which had been pierced by the grub. There may be two or three dozen or so left; if there are, it is the outside. I then went to a Nonpareil, a great natural bearer, an older and larger tree. Off this I picked 515 apples one afternoon, and 94 the next morning: this was perhaps five-sixths or more of the crop. In both instances the crop left was very small indeed for the tree; while but for the moth it would have been very large. Had I looked at these trees as early as I did at the espaliers, I am convinced that I should have saved at least half the crop or more. It would be a curious experiment, easy to try, to take some of the grubs out of apples (as may easily be done), and to place them on new ones, so as to gauge their rate of destruction from day to day. It seems strange, considering what a dreadful pest this is, that we are not better up in its habits and powers. I feel sure that, by attending to the apples early in June, a good crop may be saved, if gardeners will give themselves the trouble, while they will certainly do much to save their trees from a like visitation next season.—*Francis Francis, in the 'Field.'*

Duplicates, Desiderata, &c.

Duplicates.—I have still some duplicates of A. Rubricata, A. Sulphuralis, L. Grisearia (the finest of this moth are gone), and H. Unca. *Desiderata.*—Cosmia Diffinis, Tethea Subtusa and Retusa, Tæniocampa Opima, Orthosia Suspecta, Dicycla Oo, Aplecta Tincta, &c.— (*Rev*). *A. H. Wratislaw; School Hall, Bury St. Edmund's.*

Duplicates.—I have a few duplicates of P. Brassicæ, P. Rapæ, L. Megæra, G. Rhamni, C. Edusa, P. Napi, A. Cardamines, A. Galathea, H. Semele, C. Cardui, V. Io, Atalanta, Urticæ, A. Aglaia, P. Linea, P. Sylvanus, and a few specimens of Asilus Crabroniformis. *Desiderata.*—P. Machaon, C. Hyale, A. Cratægi, L. Sinapis, P. Daplidice, L. Ægeria, and H. Hyperanthus.—*A. B. Braine; 47, Ladbroke Grove, Notting Hill.*

Duplicates.—I have duplicates, in good condition, of T. Betulæ, T. Pruni, S. Paniscus, P. Ægon, N. Typhæ, P. Lignata, E. Venosata, and many others; also pupæ of Scrophulariæ, Vinula, S. Populi, S. Ocellatus, &c; pupæ and larvæ of A. Atropos. *Desiderata.*—L. Stramineola, E. Dolabraria, E. Syringaria, E. Lunaria, E. Fuscantaria, N. Hispidaria, C. Glabraria, C. Viduaria, Consortaria, Roboraria, Cinctaria, Extersaria, Obfuscata, Auroraria, Blomeraria, Cambricaria, Heparia, Ochraria, Straminata, Strigilata, Emutaria, Degeneraria, Salicata, Olivata, Sparsata, Sexalata, Polycommata, Simulata, Firmata, Sinuata, Munitata, Polygrammata, Fluviata, Quadrifasciaria, Lapidata, Picata, Sagittata, Silaceata, Reticularia, Nivearia, and many of the Noctuas.—*W. Clark; Corn Market, Doncaster.*

Exchange.—I have a fine collection of South-American Lepidoptera, set and unset: I wish to exchange duplicates for African or Asiatic Lepidoptera or Coleoptera (unset preferred).—*The O'Reilly; 6, Denmark Terrace, Brighton.*

Duplicates.—I have a few good specimens of the following insects for exchange:—P. Cratægi, A. Paphia, Aglaia and Adippe, M. Athalia, V. Polychloros, L. Sibylla, E. Blandina, N. Lucina, P. Geryon, C. Dominula, E. Russula (male and female), C. Plantaginis, O. Gonostigma, L. Dispar, T. Cratægi, B. Castrensis, E. Versicolor (male), C. Reclusa, N. Dromedarius, X. Cerago and Gilvago, E. Ochroleuca, E. Nigra,

H. Arbuti, and E. Glyphica.—*H. Goss ;* 8, *Goldsmid Road, Brighton.*

Duplicates. — I have good specimens of the following for exchange, namely, Sinapis, P. Cratægi, Edusa, Hyale, Aglaia, Adippe, Euphrosyne, Selene, Paphia (and black New-Forest variety, "Valezina"), Cinxia, Polychloros, Cardui, Sibylla, Ægeria, Semele, Hyperanthus, Rubi, Ægon, Lucina, Alveolus, Fuciformis, Z. Trifolii, Jacobeæ, E. Punctaria, Scutulata, Taminata, Piniaria, Aurantiaria, Diluta, Pyramidea, Perla, Cytherea, Ænea, Flammealis, Purpuralis, Trapezina, Fulvata, Farinalis, Maculata, Adonis, &c.; also slightly damaged specimens of Sponsa, Caliginosa, Bombyliformis, Heparata, Vespertaria, Lichenaria, &c. *Desiderata.*—Arion, Artaxerxes, Aglaia var. "Charlotta," Iris, Cassiope, Pruni, W-album, Actæon, any clear-wing (except Tipuliformis, Fuciformis, Bombyliformis, Myopæformis, Cynipiformis, Culiciformis and Bembeciformis), Arundinis, Asellus, Minos, Cristulalis, Muscerda, Pygmæola, Stramineola, Quadra, Cribrum, Castrensis, Trifolii, Lunaria, any Ennomos (except Tiliaria and Angularia), Viduaria, Glabraria, Abietaria, Cinctaria, Roboraria, Obfuscata, Trepidaria, Cineraria, Blomeraria, Ochrata, Rubricata, Contiguaria, Osseata, Circellata, Straminata, Immutata, Strigillata, Emutaria, Inornata, Degeneraria, Rotundaria, Pictaria, Pulveraria, Filigrammaria, Unifasciata, many Eupitheciæ, Sparsata, Sexalata, Simulata, Firmata, Derivata, Polygrammata, Certata, Psittacata, Sagittata, Suffumata, Grisearia, Fagi, Nubeculosa, Cucullina, Carmelita, Dictæoides, Tritophus, Trepida, Chaonia, Ocularis, Ridens, Orion, Leporina, Strigosa, Auricoma, Myricæ, Obsoleta, Flammea, Ulvæ, Concolor, Neurica, Geminipuncta, Helmanni, Abjecta, Haworthii, Lunigera, Ripæ, Præcox, Ravida, Pyrophila, Depuncta, Rhomboidea, Conflua, Sobrina, Opima, Croceago, Aurago, Subtusa, Retusa, Oo, Pyralina, Occulta, Adusta, Glauca, Atriplicis, W-latinum, Rectilinea, Cucullia (except Verbasci and Umbratica), Peltiger, Armiger, &c.—*H. Ramsay Cox ;* 10, *Thurlow Villas, West Dulwich, London.*

Duplicates. — I have the following insects to exchange for any local species :—C. Hyale, A. Cardamines, P. Unguicula, M. Fluctuata, T. Juniperata, E. Nanata, C. Nupta, M. Rubiginata, S. Undulata, H. Abruptaria, S. Statices, A. Oculea, P. Tersata, C. Fulvata, Z. Æsculi, H. Prasinana, L. Neustria,

S. Carpini, O. Antiqua, E. Sambucalis, B. Urticalis, and one S. Convolvuli to exchange for A. Iris.—*J. A. Clark; 11, Duncan Place, London Fields, Hackney, N.E.*

Duplicates for Exchange.—C. Edusa, M. Athalia, A. Galathea, L. Agestis, Adonis, Corydon, Alsus, H. Comma, P. Globulariæ, Villica, G. Obscurata, A. Australis, N. Saponariæ, L. Cespitis, A. Puta, A. Corticea, A. Aprilina, H. Chenopodii. Offers accepted answered immediately.—*J. P. Adams; 7, Gloster Terrace, Brighton.*

Exchange.—I have to offer larvæ of M. Stellatarum for other larvæ, pupæ or imagos. My desiderata too numerous to mention.—*W. Johnston; 25, James Street, Gateshead-on-Tyne.*

Duplicates.—I have the following insects in duplicate, and shall be glad to receive offers for them :—C. Hyale, S. Tiliæ, A. Atropos, C. Elpenor, C. Ligniperda, C. Nupta, L. Monacha, L. Quercifolia, A. Prodromaria.—*Thomas Foster; 1, Church Hill, Selby, Yorkshire.*

Duplicates for Exchange.—N. Elymi, O. Fascelina (bred), C. Davus, C. Dominula (bred), V. Cambricaria, A. Strigillaria, X. Cerago (bred), and P. Chi; also pupæ of H. Glauca and A. Menyanthidis. Answer within a week if accepted.—*Robert Kay; 2, Spring Street, Bury, Lancashire.*

Duplicates.—I have a long series of fine and well-set specimens of the following insects:—C. Hyale, L. Adonis, L. Corydon, H. Comma, Z. Æsculi, L. Helveola, C. Dominula, A. Fuliginosa, B. Quercus, S. Carpini, H. Pennaria, B. Hirtaria, A. Pictaria, A. Citraria, A. Ulmata, all the Hybernia, C. Boreata, T. Juniperata, S. Undulata, T. Batis, B. Glandifera, B. Perla, G. Flavago, T. Fimbria, X. Cerago, A. Aprilina, H. Crassalis, B. Hyalinalis, &c. *Desiderata.*—A. Iris, T. W-Album, T. Pruni, L. Arion, A. Sinuata, Y. Ruberata, N. Viridata, X. Aurago, D. Oo, C. Pyralina, A. Strigosa, C. Ridens, H. Unca, E. Fuscula, H. Dipsacea, C. Prunata, C. Silaceata, C. Imbutata, E. Fulvago.—*J. W. Russell; 18, Mount Pleasant Road, Crouch Hill, Hornsey.*

Duplicates.—I have the following insects for exchange, for which I shall be glad to receive offers: — H. Lupulinus, L. Auriflua, A. Osseata, Scutulata, Aversata, Emarginata, H. Rupicapraria, Progemmaria, Y. Elutata, P. Tersata, E. Mensuraria, D. Cæruleocephala, L. Lithargyria, M. Strigilis, A.

Exclamationis, T. Gothica, Instabilis, Stabilis, O. Upsilon, A. Pistacina, M. Oxyacanthæ, B. Verticalis, S. Prunalis, and a few each of a number of other species. My wants are too numerous to mention.—*W. D. Cansdale; Witham, Essex.*

Duplicates for Exchange.—Cardui, T. Quercus and Betulæ, Monacha, Hamula, Unguicula, Persicariæ, Punctaria, Trilinearia, Dubitata, Betularia, Quercana, Prasinana, Rubiginata (bred), Statices, Despecta, Albulata, Maculata, Pictaria, Citraria (male), Ulmata, Aurantiaria, Defoliaria, Juniperata, Tersata, Unifasciata (a few not bred), Rusticata (a few not bred). Acceptable offers for any of these replied to by return of post.—*James Bryant;* 63, *Old Broad Street, E.C.*

Duplicates.—E. Apiciaria, G. Flavago, G. Libatrix, C. Spinula, O. Antiqua (female), S. Tipuliformis, A. Porphyrea, N. Saponariæ, A. Leporina, L. Multistrigata, H. Progemmaria, E. Mensuraria, E. Ribesiaria, C. Immanata, for which I shall be glad to receive offers.—*H. Jahn; George Street, Stoke-on-Trent.*

Duplicates for Exchange.—L. Helveola, E. Advenaria, V. maculata, E. Omicronaria, P. Hippocastanaria, C. Boreata, E. Lariciata, C. Fulvata, N. C-Nigrum, H. Crassalis, S. Undulata, B. Hyalinalis. My wants are too numerous to mention.—*W. Davis;* 31, *Cowper Street, City Road, London.*

Duplicates.—I have for exchange duplicates of C. Graminis, G. Flavago, C. Solidaginis, P. Chi, L. Didymata, L. Multistrigata: they are in good condition, and well set with gilt pins.—*Mark Kershaw;* 62, *Hillgate Street, Hurst Brook, Ashton-under-Lyne.*

Duplicates.—C. Solidaginis, H. Velleda, N. Plantaginis, G. Flavago, D. Capsincola, P. Chi, S. Lubricipeda, O. Suspecta, A. Filipendulæ, D. Cucubali, O. Sparganella. *Desiderata.*—G. C-Album, V. Polychloros, P. Monacha, D. Pudibunda, L. Sibylla, Z. Æsculi, D. Fascelina, D. Coryli.—*John Thorpe; Church Street, Middleton, near Manchester.*

Exchange.—Pupæ of M. Stellatarum, E. Lanestris, and C. Vinula, for larvæ, pupæ or imagos.—*Frederic Raine; South Road, Durham.*

Mr. W. T. Dorney, of 2, North Gardens, Brighton, will much oblige me by returning the box he received from me last January.—*H. Ramsay Cox; West Dulwich, London.*

Captures at Cirencester.— I send the following list of my further captures at Cirencester:—P. Alsus, June 8th, abundant. P. Arion, June 12th, one fine specimen in an old stone quarry. C. Furcula, two pupæ on willow. D. Coryli, April 22nd, bred. P. Populi, at light. D. Falcataria, May 20th, bred. A. Basilinea, May 8th, common at light. R. Tenebrosa, June 6th, common at light. A. Pyrophila, taken mothing the previous autumn. H. Dipsacea, June 24th, flying in the sunshine. H. Arbuti, May 23rd, one specimen. A. Luctuosa, June 8th, common. E. Fasciaria, June 19th, one by beating. E. Dolabraria, June 4th, one bred. S. Lunaria, June 16th, at light. E. Angularia, larvæ plentiful. H. Abruptaria, April 24th, at light. E. Punctaria, June 16th, rare by beating. E. Omicronaria, June 16th, plentiful. A. Luteata, June 5th, rare by beating. E. Heparata, June 19th, two specimens by beating, far from any alder. A. Ornata, June 8th, common. A. Immutata, by beating, rare. F. Atomaria, May 24th, common. F. Piniaria, May 24th, rare. A. Ulmata, June 15th, common by beating amongst wych elm. E. Decolorata, by beating. E. Succenturiata, by mothing. E. Rectangulata, June 9th, at light. H. Galiata, several by beating.—*F. E. Harman; The Valletts, Whitfield, near Hereford.*

Captures in Norfolk and Lincolnshire. — During a short sojourn on the shores of the Wash my friend Mr. Hedderly and I have taken the following Lepidoptera: — H. Semele, common on the Norfolk side. H. Tithonus, in swarms. L. Ægeria, not very common, Norfolk. P. Corydon, common on the chalk, Norfolk. P. Agestis, on the sandhills, both counties. L. Rubi, larvæ on the sea buckthorn. C. Jacobeæ, larvæ very abundant. S. Salicis, common, Lincolnshire. A. Valligera, at flowers, both counties, rare. A. Tritici, very common on the sand-hills. L. Littoralis, only one, Lincolnshire. H. Sylvinus, Norfolk. M. Literosa, common, Lincolnshire. M. Furuncula, common. C. Lichenaria, rare, Lincolnshire. A. Citraria, rare, Norfolk. P. Glaucinalis, one at sugar, Lincolnshire. P. Quercana, on the sea buckthorn. Mr. Hedderly saw C. Edusa, but after he had chased it for a mile, and coming to grief several times in the rabbit-burrows, it managed to make its escape.—*R. E. Brameld; Belvoir Terrace, Sneinton, Nottingham.*

Parasitic Worm. — Will you kindly give me the name of the enclosed? I was attempting to breed a few X. citrago, but all the larvæ were destroyed by a number of parasites similar to the one enclosed.—*R. Kay.*

[A species of Filaria, known very commonly to infest insects, especially larvæ: the specific name of the worm is unknown to me.—*E. Newman.*]

Pupæ in Hemlock-stems. — On the 6th of August, while out collecting, I found some pupæ in the stems of hemlock: as I see no account in the 'British Moths' of the same, I enclose a few, and shall be obliged for the name.—*Thomas Keyworth; Doncaster.*

[From the way in which the pasteboard-box, the hemlock-stems and the pupæ were amalgamated, they appeared to have passed through a hydraulic press between Doncaster and London. I am interested in the occurrence of pupæ in such a situation, and trust you may succeed in rearing the perfect insects, when I shall be glad to name them.—*E. Newman.*]

W. A. Luff.—The moth is certainly Chelonia Hera: the larvæ feed on a number of low plants, and the eggs are laid in summer and hatch in August. They hybernate when very small, and feed again in the spring, which is the proper season for collecting them. The variety with orange hind wings is very common.—*E. Newman.*

Alpenstock.—The galls are produced by a species of Euura, and if as you say, on the wild crab, are hitherto undescribed: I regret to say the leaves were so dry that I could not recognise them.—*Id.*

Arthur P. Nix.—The animal was the electric centipede (Geophilus electricus).—*Id.*

Memb. R. C. Surgeons.—The fly is Asilus crabroniformis: I will not attempt to name the grasshopper it was carrying: the latter was in the larva state, and a very likely prey for this well-known carnivorous fly.—*Id.*

D. Smith.—The insect is Sirex Gigas: the larva feeds on the solid wood of the fir.—*Id.*

W. D. Robinson.—Your larva is that of Acronycta Psi.—*Id.*

E. Hunter.—The names of your moths are as under:—
1. Agrotis Segetum (the turnip-moth). 2. Noctua festiva.
3. Anchoscelis pistacina. 4. Apamea oculea. 5. Hadena

Proteus. 6. Nonagria impura. 7. Apamea secalina. 8. Hypena proboscidalis. 9. Miana literosa. 10. Miana rufuncula. 11. Pionea forficalis. 12. Melanippe montanata. 13. Emmelesia decolorata. 14. Pyralis farinalis. 15. Eupithecia nanata. 16. Cidaria testata.—*E. Newman.*

Insects for Sale. — A large number of well-set specimens of British Lepidoptera, in fine condition, including Herminia derivalis and many other rare and local species. Also a quantity of pupæ. For price-lists apply to — *W. H. Harwood; St. Peter's, Colchester.*

Scotch Lepidoptera for Sale.—Thomas Eedle having returned from Scotland, has a great number of Scotch Lepidoptera for sale, at reasonable prices and in the finest condition. A priced list sent on application to—*Thomas Eedle; 9, Maidstone Place, Goldsmith Row, Hackney Road, N.E.*

Insects for Sale or Exchange. — W. Downing, of Hoddesdon, Herts, has the following for sale or exchange:— Pruni, 6d.; Betulæ, 6d.; T. W-Album, 8d.; Paniscus, 6d.; Advenaria, 4d.; Apiformis, Bembeciformis, Fuciformis, Porcellus, Arundinis, Cœnosa, Neustria, Coryli, Phragmitidis, Pinastri, Puta, Notha, Parthenias, Fuscantaria, Dubitata, Grisearia, Subtusa, Hyalinalis, Carnella, Funerella, and many others too numerous to mention. Pupæ of Lychnitis, Verbasci, Carpini, Ocellatus, Elpenor. Insects and pupæ bought or exchanged.

To Entomologists. — The following pupæ are for sale, all personally collected by the advertiser:—

C. Bifida
C. Vinula
N. Ziczac
P. Dictæa
P. Dictæoides
N. Dromedarius
L. Camelina
D. Dodonæa
P. Populi
D. Falcataria
E. Lanestris
S. Populi

Also a good many Cirrœdia Xerampelina from pupæ collected by advertiser in August: they are well set with entomological pins. Also a good many pupæ of Acherontia Atropos. Address—*X. Y. Z.; Post Office, Tadcaster, Yorkshire.*

British Lepidoptera.—Mr. J. C. Stevens has been favoured with instructions from W. O. Hammond, Esq., to sell by Auction, at his Great Room, 38, King Street, Covent Garden, on Friday, October 29th, his very choice and select Collection of British Lepidoptera, formed with great care, and containing a number of rare British specimens in fine condition: amongst others will be found authentic examples of D. lineata, C. Celerio, S. musculosa, C. erythrocephala, X. conformis, &c., &c.; also a first-rate Mahogany Cabinet of forty drawers, of Standish's make; and sundry Apparatus: to be sold in consequence of Mr. Hammond's continued ill-health. On view the day prior to and morning of sale, and Catalogues to be had one week prior.

British Lepidoptera.—Mr. J. C. Stevens has received instructions from the Executors to sell by Auction, at his Great Room, 38, King Street, Covent Garden, on Friday, October 29th, at half-past 12 precisely, the well-known Collection of British Lepidoptera formed by the late E. Hopley, Esq., together with the Mahogany Cabinets in which the specimens are contained, and sundry Apparatus. In this Collection will be found many very rare and authentic specimens, and mostly in fine condition. On view the day of and morning prior to sale. Catalogues to be had one week prior.

Insects, Eggs, and Cabinets.—Mr. J. C. Stevens begs to announce that the Collections of Insects and Eggs formed by the late J. A. Turner, Esq., and advertised for sale in October next, *will not take place.*—38, *King Street, Covent Garden, September* 18, 1869.

Preserved Larvæ.—R. L. Davis (preserver of larvæ to the British Museum), Waltham Cross, Herts, has larvæ preserved and mounted for the cabinet, from 4d. each. A list sent on receipt of stamp.

Second-hand Entomological Cabinet wanted.—Wanted to purchase, a good second-hand Entomological Cabinet of about forty drawers. Address, stating full particulars and price—*A.; Post Office, Ormskirk, Lancashire.*

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NEWMAN'S ENTOMOLOGIST has been established for the publication of the Life-history of British Insects, especially of such as are injurious to the Farm and Garden; for Descriptions of the Caterpillars of British Lepidoptera, with name of Food-plant; for recording the Capture of Rarities; and as a Medium for Exchange.—The price is 6*s.* a year, or 6*d.* for any single Number, post free. Subscriptions commence either in JANUARY or in JULY.

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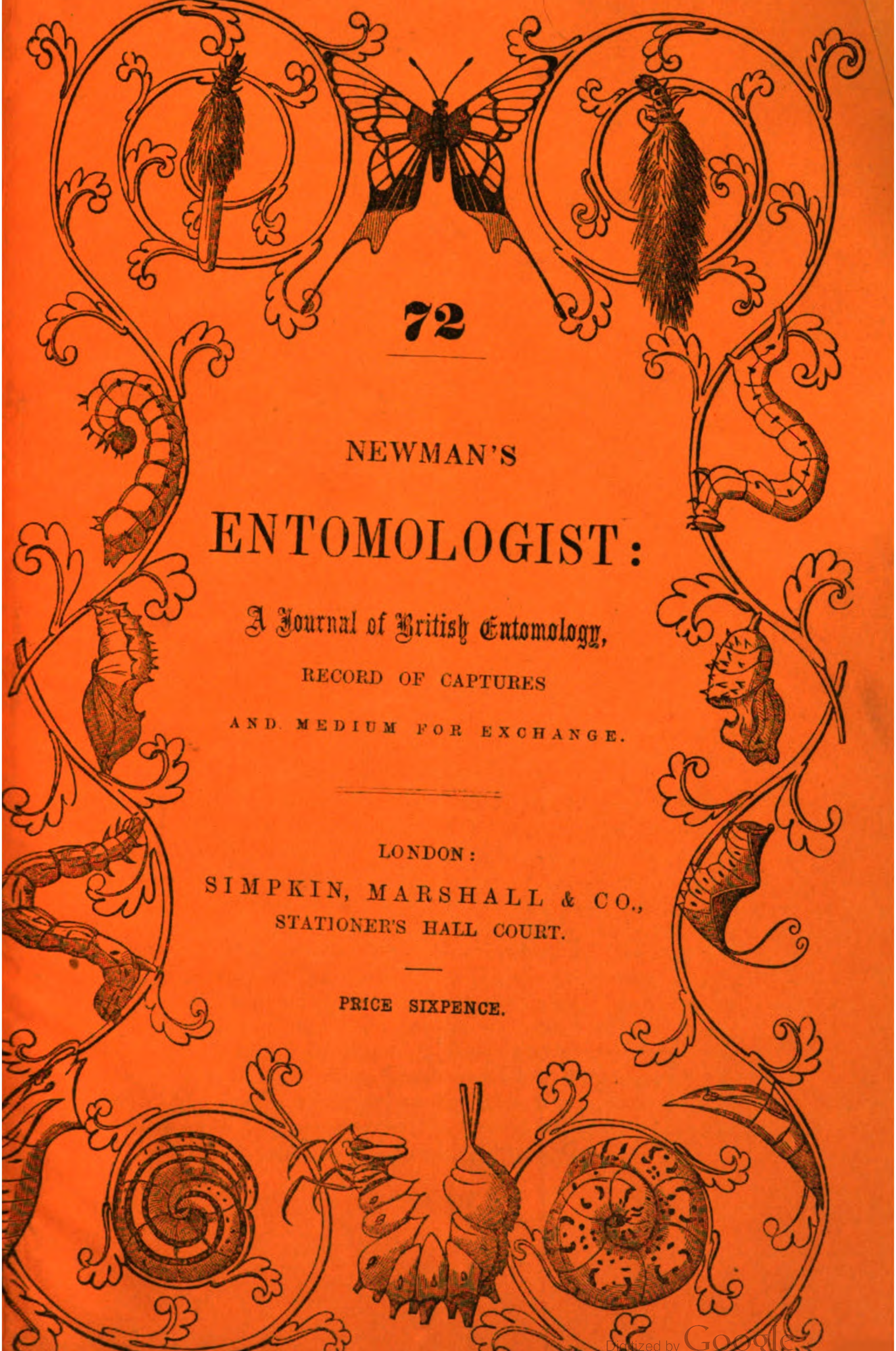

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